

RADIO

TRADE MAGAZINE

1932

They Have Copied Everything—

Except CERTIFIED TRIAD Quality

IT IS WRITTEN—

"Imitation is the sincerest form of flattery"

TRIAD

Appreciates the compliment it receives each month from other tube manufacturers who have copied our sales plan—our method of advertising—our discount schedules

TRIAD

Was first to recognize the Service Man

TRIAD

Was first to make double-tested tubes

TRIAD

Was first to offer a plan which really makes money for the dealer and Service Man

OTHERS

have made every effort to do the same thing

BUT

THEY HAVE NOT BEEN ABLE TO DUPLICATE

CERTIFIED

**TRIAD → Quality
TUBES**

CERTIFIED Triad Dealers and Service Men everywhere have sold many thousands of these tubes—they are making money—there hasn't been a single complaint. Mail the coupon today and learn how you can sell these super-grade tubes at a real profit. We protect you in your territory and you are sure of all of the inducements offered by other manufacturers, plus quality which is in a class by itself. GET THE FACTS!

TRIAD Manufacturing Co.
Pawtucket, R. I.

Gentlemen:

Please send me the outline of the CERTIFIED TRIAD Sales Plan for Dealers and Service Men.

Name _____

Address _____

City _____ State _____
My letterhead or business card is attached

STAND BY

FOR THE
"SUPREME" 1933
 Service Instruments

SUPREME
DIAGNOMETER
AAA-1—\$147.50

SUPREME ANALYZER
Model 56—\$56.25

SUPREME TUBE-O-METER
Model 66—\$59.75 Stand, extra \$7.50

All prices net f.o.b.
Greenwood, Miss.

See these jobbers today

"Supreme" Distributors

ALABAMA
Birmingham—Birmingham Electric Battery Co.
Mobile—McGowin, Lyons Hardware Co.
ARKANSAS
Little Rock—Fones Bros. Hardware Co.
CALIFORNIA
Los Angeles—Kierulff & Ravenscroft, Inc.
Radio Manufacturers' Supply Co.
Radio Supply Company
San Francisco—W. E. & W. H. Jackson, Inc.
Kierulff & Ravenscroft, Inc.
COLORADO
Denver—Hendris & Bolthoff Mfg. & Sup. Co.
CONNECTICUT
Hartford—Hatrty & Young, Inc.
Radio Inspection Service Co.
DISTRICT OF COLUMBIA
Washington—Capitol Radio Wholesalers
GEORGIA
Savannah—Frank Corporation
ILLINOIS
Chicago—Newark Electric Company
Radolek Company
Springfield—Central Auto Equipment Co.
INDIANA
Indianapolis—Van Camp Hdw. & Iron Co.
IOWA
Dubuque—Crescent Electric Supply Co.
KENTUCKY
Louisville—Harbinson & Gathright, Inc.
Paducah—Rhodes-Burford Company
LOUISIANA
New Orleans—Carbine-Harang Mach. &
Supply Co.
Electrical Supply Company
MAINE
Randolph—O'Connor & Morang
MARYLAND
Baltimore—Stewart-Warner Sales Company
MASSACHUSETTS
Boston—Sager Electric Supply Co.

Send coupon, now, for complete catalog, showing all the new **SUPREME INSTRUMENTS**, kits, combinations and service-men's parts and accessories.

Now . . . the name "SUPREME" glows with added lustre as the most diversified service line in the Industry—over thirty new instruments, combinations and kits, and myriad attractively priced parts and accessories.

Ask any of the "service-jobbers" listed on this page—get a demonstration of the instrument that every real radio-man wants—**SUPREME DIAGNOMETER AAA-1**. Explore the pages of the interesting, new, free catalog, waiting for you. Try any and every make of instrument, but buy none until you have seen the "SUPREME" 1933 product—"Supreme by Comparison."

"Supreme" Distributors

MICHIGAN
Lansing—N. L. Offenhauer
MINNESOTA
Minneapolis—Jalisco Manufacturing Co.
Winne Sales Company
MISSOURI
Kansas City—Sterling Radio Company, Inc.
St. Louis—Van-Ashe Radio Company
Walter-Ashe Radio Co.
NEW HAMPSHIRE
Manchester—Radio Service Laboratory
NEW YORK
New York City—Sun Radio Company
Wholesale Radio Service
Schenectady—Maurice Schwartz & Son
NORTH CAROLINA
Zebulon—W. B. Bunn & Company
OHIO
Cincinnati—M. W. Faintle Co.
Cleveland—The M & M Company
OKLAHOMA
Tulsa—Oklahoma Radio Manufacturing Co.
OREGON
Portland—Wedel Company, Inc.
PENNSYLVANIA
Philadelphia—M & H Sporting Goods Co.
TENNESSEE
Gallatin—J. A. Sloan Company
Memphis—Orgill Brothers & Co.
TEXAS
Austin—Walter Tips Company
San Antonio—Southern Equipment Company
WASHINGTON
Seattle—Harper-Meggee Company, Inc.
Seattle Radio Supply Company
Wedel Company
Spokane—Spokane Radio Company
WEST VIRGINIA
Charleston—Bond-Rider-Jackson Company
WISCONSIN
Milwaukee—Radio Parts Company
Sheboygan—J. J. Koepsell Company



Get in on Christmas business now with **R E M L E R**

Stop exchanging dollars and start making money. The Remler line is profit protected. The margin to the dealer makes every Remler sale worth while. Remler receivers give satisfaction and build customer goodwill.

The Remler line is complete—including the prestige building Remler Florentine treasure chest which promises to be a popular number for the Christmas trade. This attractive gift radio is carved from richly antiqued solid hardwood, lavishly hand finished. Its splendid tone quality appeals to lovers of good music. It is unquestionably the most distinctive chest radio on the market.

Other models include the six tube superheterodyne illustrated. Circuit has been engineered to take advantage of the new type tubes. Incomparably fine tone—distance—sharp tuning and sturdy construction throughout. Short wave optional.

The nine tube superheterodyne table model is distinguished by its exquisite cabinetry, its superb symphonic tone quality, and its transcontinental range. Other features include noise suppressor and automatic volume control.

Get in on Christmas business now with the new 1933 Remler receivers.

Remler Company, Ltd.
2101 Bryant Street San Francisco, Calif.

REMLER — THE RADIO FIRM AS OLD AS RADIO

1933 Remler models List Prices

Model 21-3 - \$29.90
With Short Wave

Chest - - - \$39.50
With Short Wave

Model 10-3
(Illustrated) \$39.75
With Short
Wave - \$42.75

Model 15-3 with
Short Wave, \$59.50

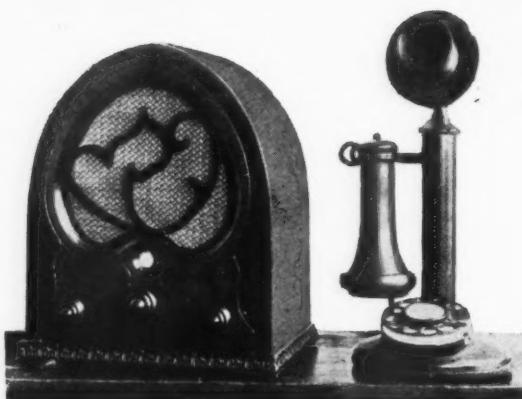


Paramount Radios Sell Themselves

SALES RECORDS BROKEN EVERYWHERE

Paramount Dealers Are Making Money

Sold
Direct to Dealers
at a Net Price of
\$8.95
With Tubes
Tax Paid
CASH WITH ORDER
\$8.45
In Quantities
of 25



**PARAMOUNT
"KEWPIE"**

Retail Price
\$19.95

Volume Production Makes This Price Possible. We are now shipping the Kewpie Radio to most all points of the world and dealers everywhere report exceptional volume of sales.

1933 FEATURES

Meets all competition—price, eye value, performance that will create a large volume of sales. Uses the new type tubes, full dynamic speaker, illuminated dial, beautiful cabinet. Tubes used — I Type 57-58-47-80.

— also —



The World's Finest Small Radio

**PARAMOUNT'S
PEE-WEE**

with

Tone Control

BETTER quality, larger transformer, more parts, different circuit, better speaker, best tubes, tone control, construction and refinements that make a radio give dependable long service. We have reports of distance up to 1500 miles on this powerful set.

\$10.95

With Tubes—Tax Paid

\$9.95

In Quantities
of 25

Member of
Los Angeles
Chamber of Commerce

LOS ANGELES RADIO MFG. CO.
944 So. Broadway, Los Angeles, Calif.
Cable Address—LARAD

Manufacturers of
Quality Radios
Since 1925

Prices quoted are NET CASH. 50% deposit required with order. P.O. money order or cashier's check assures immediate shipment.

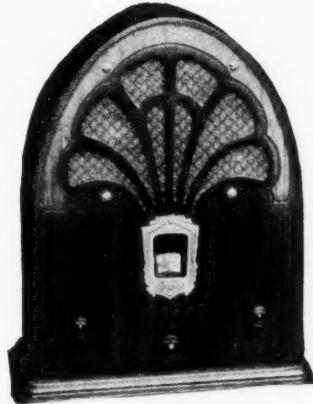
SIMPLEX is moving---FAST

Sensational in Performance....Amazing in Price

THE FASTEST MOVING LINE IN AMERICA

AC-DC
BATTERY

Long and Short Wave



Model P with RCA Tubes \$29.95 Plus Tax

110 or 220 Volt AC 1/55 1/57 1/58 1/47 1/80 Tubes
110 or 220 Volt DC 1/85 2/38 2/39 Tubes
Battery (2v. Air Cell) 2/32 1/33 2/34 Tubes

Superheterodyne Five Tubes. Long and Short Wave. AUTOMATIC VOLUME CONTROL. Five Tuned Circuits. Sensitivity one microvolt per meter. Never before so fine a radio at so low a price. Brilliant performance—Deep Full Volume—10 Kilocycle Selectivity—Extraordinary range—brings in distant stations with unbelievable ease and remarkable clarity. Beautiful cabinets. 9 in. wide, 12 in. high, 6½ in. deep, weight 13 lbs., packed 16 lbs.



Model R with RCA Tubes \$19.95 Plus Tax

110 or 220 Volt AC 1/57 1/58 1/47 1/80 Tubes
110 or 220 Volt DC 1/36 2/38 1/39 Tubes
This Model not made in Battery Type.

Tuned Radio Frequency. Four Tubes. Long and Short Wave. An excellent instrument for local reception but not recommended for great distance or extreme selectivity. 8½ in. wide, 11½ in. high, 5½ in. deep, weight 9¾ lbs., packed 12½ lbs.

For 25-45 Cycle add \$2.50 to List Price

Outstanding Features—Both Models

Long and Short Wave—Two Bands in one.
550-4000 Kilocycles (75-550 Meters).
Simple—Efficient Short Wave Switch.
Tone Control—Static Suppressor.
Built in Antenna (AC)—Phonograph Provision.
Deep, Full Tone at any Volume.

Rugged Ball Bearing Condenser.
Illuminated Dial—Kilocycle Calibration.
Chassis Parts Completely Rust-Proofed.
Self Healing Electrolytic Condenser.
Adequately Shielded Throughout.
Vernier Tuning—Dynamic Speaker.

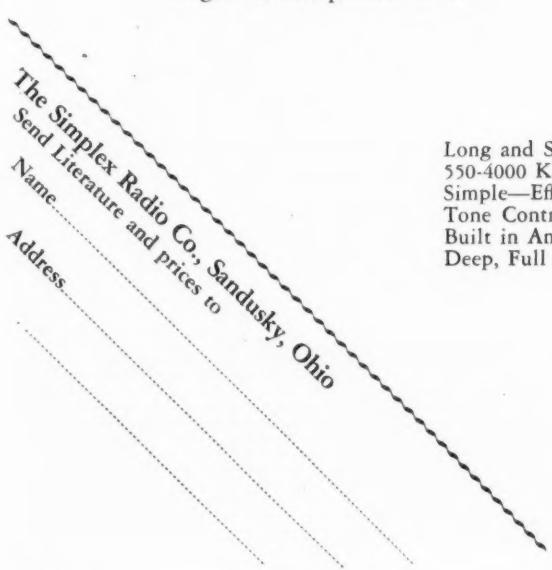
Licensed by RCA and Affiliated Companies

(Western prices slightly higher)

The Simplex Radio Co.

Sandusky, Ohio

Export Dept., 15 Laight St., New York



MAGNAVOX

SPEAKERS and CAPACITORS

MODEL
150

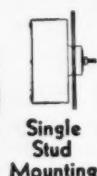


6" Dynamic Speaker

MODEL
152-X



10" Dynamic Speaker



Single Stud
Mounting

Model 154-8" Auto Speaker

MODEL
517



14" Dynamic For Public Address

Mershon
Capacitors

Right
Clamp Type

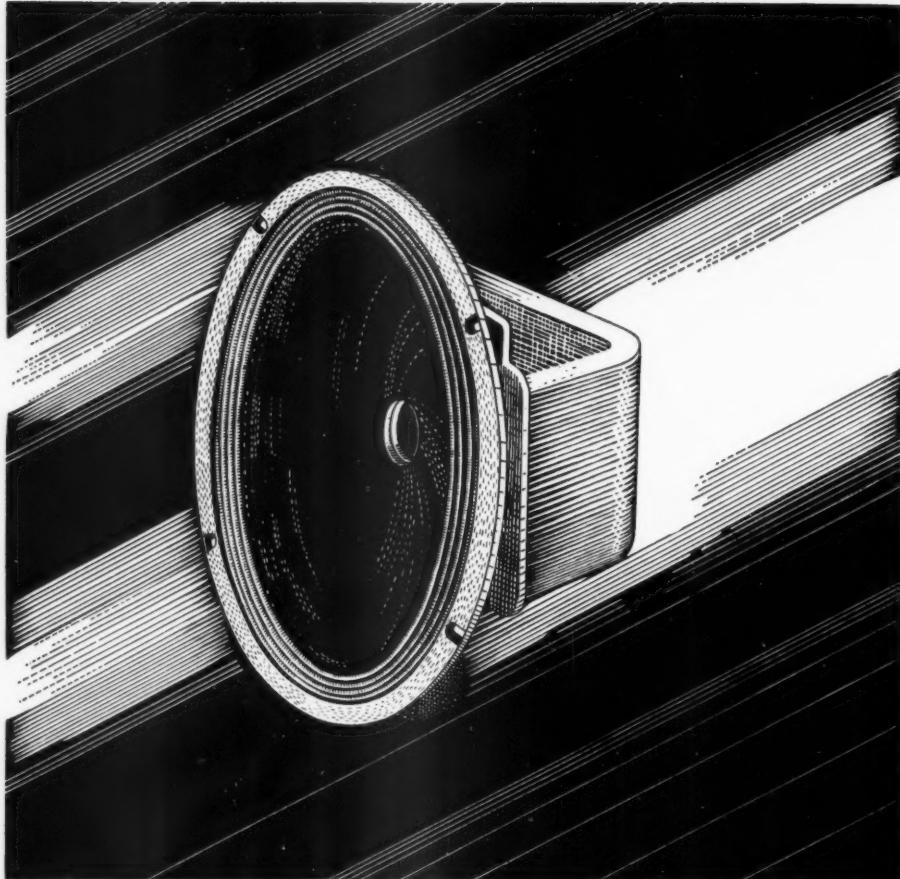
Left
Stud Type
Mounting



Lug
Terminals

With
Flange

MAGNAVOX Capacitors



•MAGNAVOX PM SPEAKERS FOR BATTERY OPERATED RADIO SETS •

GENUINE Dynamic performance in a PM speaker at last . . . Magnavox quality and dependability too! It makes possible a battery set with performance equal to the finest power operated sets, for homes without electric service.

Sixteen of America's best known manufacturers, who make the finest battery operated radio today, are using Magnavox Permanent Magnet Dynamic Speakers as standard equipment. The active market for Battery Sets is constantly increasing.

Magnavox PM speakers are also used in automobile radios and for multiple installations in schools, hotels, etc. Write for bulletin. Other devices of Magnavox manufacture are listed in the column at the left. Submit your specifications and ask for samples of any which interest you.

Magnavox Company Ltd.

ESTABLISHED 1911
GENERAL OFFICES AND FACTORY, FORT WAYNE, INDIANA

Subsidiaries

THE MAGNAVOX COMPANY, ELECTRO FORMATION, INC.,
MAGNAVOX (AUSTRALIA), LTD., MAGNAVOX (GREAT BRITAIN), LTD.

MUSICAL NOTES

FAR-EASTERN Radio of Bangkok, Siam, is in the market for a few unusually good lines of American made radio sets and supplies. This subscriber has asked us to recommend certain products. Small receiving sets and amplifying equipment are wanted. Devices used for talkies are also in demand in Siam. If you have something of interest please write to our subscriber, Mr. F. J. Wicframaya, Far Eastern Radio, 110, Chareon Krung Road, Bangkok, Siam.

■ ■ ■
YOU should double the circulation of 'RADIO' next month," said a jobber to our circulation manager a few days ago. We had shown him the advanced proofs of some of the material that goes into the Christmas number of the magazine. We hope you will like it as much as he did.

MANY still believe that "RADIO" is a Pacific Coast magazine. Only 10 per cent of our subscribers are located west of the Rockies. Eighty per cent of the monthly distribution of "RADIO" is in the Eastern and Mid-Western states. Another 10 per cent goes to foreign radio businessmen. We print "RADIO" in San Francisco only because it was founded there, sixteen years ago. Favorable prices and other conditions have prompted us to continue in business at the place where the magazine was born.

■ ■ ■
WE FIND that we are unable to do without your 'RADIO' and wish to get back on your subscription list," says a letter from Flagler Radio Company of Miami, Florida.



That Christmas Problem Again

IT CONFRONTS you once each year. We offer, as a suggestion, a subscription to "RADIO". Many of your closest friends are in the radio business, just like yourself. Many of these friends will be mighty pleased to receive "RADIO" for one year as a Christmas gift from you. Coming once each month your friend is reminded of your thoughtfulness for an entire year. Every time he receives the magazine he will think of

you. Send us the names and addresses of those to whom you desire to have us send "RADIO". We will send a Christmas card to these people, telling them of your thoughtfulness. The card will be mailed so as to arrive on the day before Christmas. Each subscription costs \$2.00 if ordered before December 20th. Then the price goes up to \$3.00. That's not too much, even in these times, to spend for a gift for someone whose friendship means much to you. Think it over.

Christmas-Gift Subscription Order For "RADIO"

Publishers of "RADIO"—Pacific Bldg., San Francisco, Calif.

Here is \$ for subscriptions to "RADIO" for one year each (at \$2.00 per year) to be sent to the following, with my compliments shown on an appropriate Christmas Gift Card which you are to send to each person for whom I am herewith subscribing.

Name	Address
Name	Address
Your name.....	Your address.....

RADIO FOR NOVEMBER

"RADIO"

The National Trade Magazine

FOR NOVEMBER, 1932
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Editor—K. N. FORD

Business Manager—H. W. DICKOW

FORECAST FOR DECEMBER "RADIO"



ENCOURAGED by the continued upward trend in the radio business, the December issue of "RADIO" will reflect the progress of the times with an even better sales and service section. A new department of information on vacuum tubes will be added to the magazine. The information for these new pages will be written by one of the outstanding tube engineers whose name we have been asked to withhold. Another department of information on resistor problems and replacement requirements . . . back again with the interference elimination department . . . and still more data on the proper use of test instruments for the dealer and shop man. A well-rounded issue, filled with the kind of information that helps you save time and money. Again we ask for communications from readers, telling us how you have solved some intricate sales or service problem. Proper remuneration will be made for all acceptable material.

As We Go To Press

We Hear This . . .

The 33½ Plan Clicks

THE RCA-CUNNINGHAM tube stimulating plan, whereby the customer was offered a 33½% discount on all tubes purchased during a brief interval late in October, has resulted in the sale of a tremendous number of tubes. The plan, briefly, entitled the dealer to an added discount, not quite as great as that offered the ultimate consumer, plus an option to buy 135% more tubes at low prices, as the campaign was brought to a close. In short, if a dealer bought and sold 100 tubes while the campaign was in progress, he was entitled to buy another 135 "campaign priced" tubes. In all, he secured 235 tubes at a lower price than at any previous time. Likewise the dealer who sold 1000 tubes was entitled to purchase an additional 1350 tubes at the "campaign price" which thereby gave him an opportunity to stock up on tubes to sell at full list price, bringing him an added net of almost 35% over and above the usual price. One prominent jobber sold 3,000 tubes in one day during the campaign; almost as many tubes as he sold in a month, a year ago at this time.

Of vital interest is the fact that this tube campaign also resulted in the sale of an enormous number of replacement parts, new speaker cones, volume controls and whatnots. New tubes in old sets brought about rejuvenation, showing-up of defective speakers and volume controls. The louder signals from the set, by use of new tubes, made the old cones rattle, made the volume controls more noisy. Three birds killed with one stone.

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Speaker Patents Pooled

MAGNAVOX, Jensen, Utah and Lekton phone have pooled their speaker patents and are bringing suit against department stores that sell sets using speakers that infringe the patents of the combine. Actions have already been filed against certain New York stores.

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"Believe It Or Not"—

CRYSTAL sets are selling again. All because the crystal fad is about fifteen years old and many boys and girls who are building crystal sets today were not on this planet fifteen years ago. These "newcomers" are beginning at the beginning by building or buying little crystal sets. In some communities, school boys and girls are taught the how and why of radio by being asked to build a crystal set and bring the finished product to school so that the instructor can hook it to a pair of headphones, listen-in and give the pupil an "E" mark on the report card, if the set operates satisfactorily. Instead of teaching the kiddies the art of paper-doll dressing and wood-whittling some instructors deem it wiser to teach something about the romance of radio. That's just one reason why you find crystal-set supplies in the front-row bins of nearly every parts dealer who is an up-and-at-'em merchandiser.

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THE Ford Motor Company is planning to offer auto radio sets as optional equipment on certain models of their cars next year.

manufacture the midget sets in the Gilfillan plant with Radio Television Co., also of Los Angeles, as jobbers.

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BILL HITT, Los Angeles factory representative, will be President of the Southern California Radio-Music Trades Association for the coming year.

□ □ □

RANK DAVISON and Bob Haynes, original partners in the Davison-Haynes Corporation, have re-entered the manufacturing field in Los Angeles as the Davison-Haynes Corporation, at 1730 Venice Boulevard. Davison Radio Television Co., having no connection with Messrs. Davison or Haynes, remains with offices and factory at the Gilfillan plant with Arthur Baxter in charge.

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Eclipse Causes Fading

MANY of the millions who sought to see the eclipse of the sun on August 31 were disappointed, for big clouds obstructed the spectacle in many regions. There was another eclipse on the same day, however, which was successful. The one in which the majority of observers were interested was the optical eclipse; the other was the electronic or radio eclipse.

At Conway, N. H., a complete radio eclipse of short-wave signals, preceding the optical eclipse by two hours, was noted by Dr. E. F. W. Alexanderson, radio consulting engineer of the General Electric Company. This radio eclipse started at 1:30 o'clock in the afternoon. As the moon began to cast its shadow over the earth, the radio signals gradually became stronger and were back at full strength about a half hour before the totality of the optical eclipse.

This, according to Dr. Alexanderson, seems to prove that fading is caused by an electronic eclipse rather than the approach of darkness.

An unusual happening occurred about one minute before totality of the optical eclipse. The signal strength increased with a sudden burst, died down just as suddenly and repeated its blast for a second time, lasting but a few seconds. This burst of strength in the signal, which Dr. Alexanderson was unable to explain, was of such intensity as to cause his assistants to pull their earphones from their ears.

Another assistant of Dr. Alexanderson, who was listening at the same time to a 30-meter broadcast from Nauen, Germany, had a similar experience.

"With our radio facsimile outfit we have recorded what I believe will be a most important record for scientists," explained Dr. Alexanderson. "We made records on Monday and Tuesday during the same period of time. By comparing these we can see just how shortwave radio was affected by both the electronic and optical eclipse. It will take time to study these records and reach definite conclusions."

Radio Markets of the World, 1932

New Booklet Issued by Department of Commerce, Bureau of Foreign and Domestic Commerce, Washington.

BECAUSE of increasing competition, import restrictions and the growing enforcement of patent rights, it is more than ever necessary for the American exporter of radio apparatus to be familiar with current conditions in foreign markets.

The study of world radio markets just issued by the Commerce Department covers every phase of the radio situation abroad, both in a general way and by specific countries and should be in the hands of every American exporter of radio equipment. It also contains a wealth of material on foreign radio conditions of universal interest.

Among the subjects discussed in the report are—

- Broadcast development.
- Legislation and regulation.
- Engineering developments and patents.
- Radio reception abroad.
- Exports of radio apparatus from the United States.

Broadcasting stations in operation.

Copies of the report may be obtained for 10 cents from any branch office of this Bureau or from the Superintendent of Documents, Washington, D. C.

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New Eveready Jobbers

Jobbers recently appointed in the Eastern section of the country by National Carbon Company to handle its Eveready Raytheon 4-Pillar Tubes include:

Asbury Wholesale Radio Service, Asbury Park, N. J.

Globe Motorists Supply Company, New Rochelle, N. Y.

Masbach Hardware Company, New York, N. Y.

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ANNOUNCEMENT of the appointment of three new jobbers for the sale of RCA Victor Centralized Sound Distribution Systems, was made from Radio Headquarters at Camden, N. J.

They are the Continental Radio Corporation of Hartford, Conn., The Hollingsworth Company, Philadelphia, Pa., and The Pixley Electric Supply Company of Columbus, Ohio.

The new Centralized Radio Jobbers have long been leaders in their field and retain expert staffs of engineers who will be at the service of architects, consulting engineers, contractors and builders to assist in the preparation and layout of plans for the installation of the RCA Victor Centralized Sound Distribution Systems in their respective territories.

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Los Angeles Manufacturers' Notes

ANNOUNCEMENT from Southern California indicates that Gilfillan Bros. have taken over the name and line of the Willard Radio Co. They will continue to

Raditorial Comment

BY THE EDITOR

"RADIO"—As You Like It

THE new "front" which "RADIO" presents with this issue is the answer to a survey we have just concluded among the various classifications of people who subscribe to this magazine. It was found that most of our readers are doing business as jobbers, retailers, service-men, exporters and importers and a number of others devoting their time to a former branch of retailing . . . selling things for amateur use.

THOSE of our readers who are in retail radio tell us that the modern radio trade paper should devote considerable space to service and shop notes; should print a monthly listing from which can be found the many things made for radio and allied lines; should print this listing month in and month out, and should strive to keep the reader at all times informed of every new development in the industry.

IT HAS been found that those now engaged in radio merchandising are in this business to stay. Out-weeded are the thousands who rushed into this business not knowing more than an iota about it, not intent on doing anything to further the interests of radio . . . not content to stay with it when the going was hard.

Most of us have been operating on greatly reduced schedules; overhead reduced to the core. Now we see the light of day. There are still 8,000 live-wire retailers in this business . . . half a thousand jobbers who know merchandising from A to Z . . . twice as many service men as retailers, and a tremendous number of service men who devote but a minor portion of their time to the work.

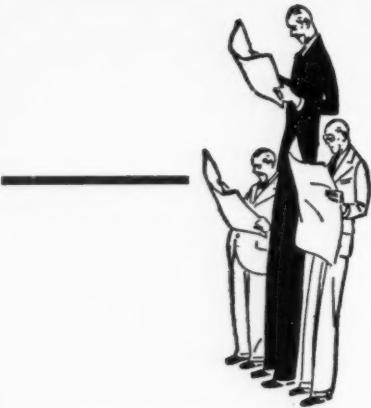
INCREASING rapidly, but sanely, is the manufacture of some types of radio sets for which there is a popular demand. Factories that made a few dozen sets a day at this time a year ago are now putting through from 200 to 300 sets each day. Tube replacement sales are UP. The demand for good test equipment has improved 20%. Small replacement parts are selling fast. Those who complained about profitless service work in boom times now report brisk business from service; each job producing a PROFIT. The depression has knocked some sense into a lot of people who

never realized that service should sell at a profit. The mad rush to sell carloads of merchandise at any price . . . make a lot of money from the initial sale and then lose most of it because of the many service calls which had to be made to keep the set in working order . . . has given way to the 1932 mode of selling all things at some kind of a profit and keeping these things sold with the kind of service for which any customer is willing to pay a reasonable price. With lower unit selling prices the public knows that it must pay for service. And there's many a dealer in this business today who is making more profit from his service work than from the initial sale of the radio set.

ENCOURAGING is the report that wise dealers no longer buy all of the things that the glib-tongued salesman carries in his bag. All of which has resulted in a tremendous scarcity of surplus merchandise . . . has enabled the manufacturers to build only enough merchandise to go 'round profitably . . . has convinced the prospective purchaser that he can't buy the same set tomorrow for half what he paid for it today.

BRADSTREET'S reports fewer failures this month than a year ago at this time. Level-headed exporters report an improvement in foreign radio buying. Everybody is beginning to feel optimistic. The feeling is highly contagious. It is reflected in the pages of this issue of "RADIO". Our business was among the first to feel the effects of the depression. A publisher loses his advertising contracts long before the public knows that a certain factory is about to shut down temporarily or permanently. Likewise, a publisher receives new contracts long before others know what the future holds in store. "RADIO" has been increased in size, has been made more worth-while for the reader simply because we are in receipt of enough new business to warrant this growth.

AFTER you have finished reading this copy of the magazine why not pass it along to someone else in the radio business and help encourage him, too?



NEWS + + + THE LONG

Patent Protection Demanded

AT MEETINGS of radio industry leaders in New York, including the Board of Directors and Receiving Set, Tube and Parts Divisions of the Radio Manufacturers Association, several important and vigorous measures to improve merchandising conditions and prevent unfair competition were adopted.

Chief among these was unanimous adoption by the RMA Board of Directors of a formal resolution calling on radio patent licensors, including the Radio Corporation of America, to take adequate action against unlicensed manufacturers. The resolution follows:

"Inasmuch as the manufacture and sale, without royalty payments, of unlicensed radio apparatus which infringes patents under which members of this Association are licensed and pay royalties subjects such members to serious disadvantages in competition;

"THEREFORE, BE IT RESOLVED, that the owners of patents under which members of this Association are licensed and pay royalties be requested by this Association to enforce in every proper manner respect for their patents by the manufacturers and vendors of competing apparatus which infringes such patents."

This action immediately follows recent numerous lawsuits instituted by holders of loud speaker patents against many prominent chain-store, furniture and other purchasers of unlicensed products and is expected to result in similar action to protect receiving set manufacturers against many unlicensed and irresponsible manufacturers.

□ □ □

RMA "Certified" Sets

RECEIVING sets offered to the public by RMA set manufacturers soon will bear an RMA label certifying official Association approval and manufacture under RMA standards. Only manufacturers who are members of the RMA will be permitted to use this label on their products as another measure to protect "legitimate" manufacturers. Radio dealers and jobbers in intensive advertising, and the public also, will be urged to buy RMA "certified" receiving sets.

The RMA label, of attractive design either in metal or paper composition, will certify official Association approval by the RMA Engineering Institute. Establishment of this new RMA Engineering Institute was authorized by the Association's Board of Directors at New York, October 21. The Institute will be under the direction of Mr. Franklin Hutchinson of New York, Chairman of the RMA Engineering Committee, and will consist of five leading engineers appointed by Chairman Hutchinson and approved by the RMA Board. The Institute will give its approval to receiving sets of RMA members which are manufactured in

accord with specifications adopted by the Institute and the RMA Board. The initial specifications under which the RMA label may be used provide that:

1. All sets which carry the RMA label shall have been submitted to the Underwriters' Laboratories for approval, except sets for which the Underwriters have no requirements.
2. Sets shall cover the entire United States and Canadian broadcast band.
3. Sets shall be non-interfering in accordance with RMA standards.
4. Sets shall meet quality and performance standards of the RMA.

The new RMA labels, copyrighted, are being prepared and will be available soon to RMA set manufacturers. The date of their initial distribution and use will be announced well in advance to permit their use by manufacturers, for them to proceed with advertisement to the trade and the public of the new plan to certify sets of standard manufacturers. Later on, to facilitate use of the RMA labels, each manufacturer will be permitted to secure his supply of RMA labels after approval of his models by the RMA Engineering Institute.

The Association proposes not only to promote sales of receiving sets bearing the RMA label, but also to prevent infringement or improper use by manufacturers not holding membership in the RMA.

The certification plan, establishing the new RMA Engineering Institute, was developed by the Association's Set Division, headed by Arthur T. Murray of Springfield, Mass., Chairman, and the initial specifications for sets sold under the RMA copyrighted label were adopted at a meeting of a number of leading engineers October 21 at New York, with Chairman Hutchinson of the Engineering Division presiding. The initial specifications will be further developed and defined later.

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To Reduce New Tube Models

COOPERATION between leading receiving set and tube manufacturers to reduce the number of new tubes brought into the market was effected at meetings October 21 in New York of the RMA Set and Tube Divisions and at the meeting of the Board of Directors at the Commodore Hotel. President Fred D. Williams of Indianapolis presided over the Directors' meeting which was largely attended and largely devoted to the serious tube situation.

Chairman S. W. Muldowny of the Tube Division held a preliminary meeting of prominent tube manufacturers to discuss the burdens not only on manufacturers, but on jobbers and dealers evolved from the promotion of new tubes. At the RMA Directors' meet-

ing, when a joint conference of set and tube manufacturers was held, it was decided that Chairman Murray of the Set Division should formally and in detail advise all receiving set manufacturers and their engineers of the serious difficulties, including loading up of dealers, involved in the promotion of numerous new unnecessary and minor tubes. Set manufacturers will be urged to reduce their demands on tube makers for products embodying only minor or special developments.

A conference every three months between leading receiving set and tube manufacturers, represented in the Set and Tube Divisions of the Association, to consider new tube developments, was proposed. Chairman Murray and Muldowny will secure the opinion of leading manufacturers regarding the plan for a quarterly conference on new tube problems.

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No Trade Show In 1933

THERE will be no RMA trade show in 1933, according to a decision of the Association's Board of Directors at their meeting in New York on October 21. After considerable discussion the Board of Directors voted to "skip" the annual trade show next year and learn decisively if business is impaired or retarded by the holding of a show. On this point there are conflicting opinions and the Board decided to omit the 1933 trade show in order to determine whether business is hurt or helped by this annual industry event.

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Advertise Radio Programs Instead of Gadgets

RADIO manufacturers, jobbers and dealers are urged to use their advertising appropriations and space more in announcement of broadcast features on the air and less on technical matters. This new advertising policy, designed to help broadcasting interests as well as the radio public and radio sales, was stressed at the RMA Board of Directors' meeting October 21 in New York by President Aylesworth of the National Broadcasting Company during an informal luncheon discussion. President Aylesworth also promised to develop broadcast programs designed especially to promote use and, therefore, sales of automobile receiving sets and also sets particularly adapted to office use. Business programs for business men, President Aylesworth said, are now on the air but will be developed further and more successfully if manufacturers will build sets more adaptable to offices and office furniture.

Support by the radio industry of broadcast features, such as special sporting events of general interest and others, was discussed by President Aylesworth with the RMA Board.

AND SHORT OF IT AT A GLANCE



Simplex Going Big

SIMPLEX RADIO of Sandusky is said to have paid the largest royalty for set license fees to the RCA in the third quarter of the year.

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Farquharson Dies

A. G. FARQUHARSON, secretary of the Southern California Radio-Music Trades Association, passed away late in October. He had been secretary of the music association for more than ten years and of the radio group for exactly ten years. When the two groups were merged a year ago he became secretary of the new body.

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Deplores Price Cuts

ALBERT R. CALLIES, who is in charge of much of Stewart-Warner's advertising and sales promotional work, tells us that reduced prices do not stimulate sales. Merchandisers with more vision, who have begun to recognize the futility of such procedure, have recently been stressing the necessity of manufacturers' increasing list prices so that dealers, distributors and they themselves may get back to a safe, sane, livable basis of operation. Says Mr. Callies: "In times like these, the tendency of many manufacturers is to try to capture a bigger share of existing business in their field through the obvious expedient of reducing prices. Such conditions, owing to the pressure of competitors who are also thinking along the same lines, result not only in profits going into the discard, but they fail in their primary purpose of stimulating sales, because the public thinking prices may go still lower, delays buying."

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Service Men Organize

PLANS for the First Intersectional Convention of the Institute of Radio Service Men are being laid. Inasmuch as the meeting is to be open to members and non-members of the Institute throughout the entire midwestern section of the country, it is estimated that the registration will run well over a thousand, the estimate based upon the fact that a recent meeting confined to Chicago was attended by seven hundred service men and dealers.

The convention will be held at the Hotel Sherman in Chicago, January 9 to 11, and the program, devoted strictly to problems of the service profession, will be chock full of technical discussions of such a nature that service men can ill afford to forego the opportunities which the meeting will bring to them. It represents the first meeting of an extensive nature and in the exclusive interest of the service branch of the radio industry that has ever been held. In addition to the technical discussions, trips to laboratories are being provided for those who desire to obtain first hand information regarding the workings of the modern radio factory or laboratory.

Arrangements are being effected to have field engineers from practically all of the leading radio manufacturing plants discuss special features about the sets produced by the companies which they represent.

New Sales Idea

THE Republic Refrigerator Company of Detroit is licensing wholesale distributors to assemble and distribute Republic refrigerators, giving them the exact cost on all manufactured parts necessary to assemble a complete refrigerator. Says Mr. Pace of REPUBLIC: "Our plan is similar to the 35 assembling plants which Ford has for assembling and marketing his cars, except that in his case Mr. Ford happens to own all of them, and in our case the distributor will own them himself. Distributors are required to assemble Republic refrigerators to rigid factory specifications. A policy of lower costs by decentralization of assembling and manufacture—with licensed distributors making the assembling profit—is the aim of this new Republic policy. John Boydell of Detroit has been appointed to act as Pacific Coast Representative.

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Howard Radio Company Inaugurates New Sales Policy

AFTER months of gathering data on the marketing of radio sets with the co-operation of the Department of Commerce, the Radio Manufacturers Association and a survey conducted among more than 4,000 representative retail radio dealers throughout the country, the Howard Radio Company of South Haven, Michigan, has announced the inauguration of a new sales policy which will be put into effect at once.

The new policy of the Howard Radio Company will be to sell direct from the factory to dealer on a basis whereby the dealer is assured of a net profit of not less than \$30.00 on each sale, even after making allowance for trade-ins. There will be no frequent changes in models and exclusive selling territories will be granted, which will go a long way toward eliminating competition, according to Howard Sams, General Sales Manager.

The new Howard models will be competitively priced, which is possible only by the manufacturers' policy of direct to dealer sales. The new models will be priced to allow the dealer an adequate allowance for trade-ins. It was interesting to note from the reports received from more than 4,000 retail radio dealers that approximately 78 per cent of the total volume of sales involved a trade-in of some kind.

Howard has been manufacturing radio sets since 1921 and has enjoyed an enviable reputation for its business policies and the quality of its product.

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BOSTON STORE and Weibolt's, two of Chicago's large department stores, have been sued under the Hazeltine-Latour patents and have returned to the factories a considerable quantity of sets which were not licensed by Hazeltine-Latour.

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MORRIS METCALF heads the new radio company known as Essex Radio Corporation of Springfield, Mass. The Essex products will be merchandised by Bosch. An R. C. A. license has been secured.

The Westinghouse Report

OPERATIONS of Westinghouse in the third quarter of this year reflected the general low level of business throughout this country and abroad, the statement to stockholders says, and resulted in a loss of \$2,715,122 compared with \$1,881,979 in the second quarter and \$1,320,148 in the first quarter of this year.

This deficit in the third quarter of this year is somewhat less than in the first quarter of 1931 when sales billed were some 60% greater than in the third quarter of this year.

In the effort to balance income and outgo, heavy reductions in salary rates have been made along with drastic curtailment of all other expenses, which are still receiving active study and further reduction.

The drop in the volume of new business has, however, been so severe as to more than offset the effect of these reductions. The rate of incoming orders this year has fallen below any like period in the past twelve years. However, Westinghouse has secured its proportionate share of available new business.

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Plan Offered To Widen Broadcast Band

SUBSTANTIAL progress is reported in the effort at the Madrid International Radio-telegraph Conference to widen the broadcasting band. Bond Geddes, Executive Vice-President and General Manager of the RMA, joined with broadcasters and others in a conference in Washington at the State Department on October 24 regarding a definite proposal from the Madrid conference. Undersecretary of State William R. Castle presided over the Washington meeting and presented a compromise proposal on widening the broadcast spectrum. It would provide for addition of 70 broadcast kilocycles below the present broadcast minimum of 550 k.c. and would displace some marine and other frequencies. The plan was presented to the Madrid Conference by Canada, Mexico and Cuba and is designed to provide these countries with sufficient broadcasting space, thus avoiding serious interference by Mexican and Cuban broadcasters with American radio listeners and stations.

The American delegation at Madrid asked the approval of the State Department to support the proposed treaty change, sponsored by the Canadian delegation and endorsed by Mexico and Cuba. The National Association of Broadcasters, the Federal Radio Commission through Commissioner Starbuck, and radio communication interests also favored the "Canadian compromise" and RMA support was given in conjunction with that of other radio interests, although the plan was opposed by Navy, Coast Guard and American shipping interests.

Paul B. Klugh of Chicago, who is the RMA representative at the Madrid Conference, was cabled of the State Department conference and he is known to be working vigorously toward a result at Madrid which might be highly beneficial not only to the American radio public, but to radio manufacturers.

Ramblings

Things That Are Happening...Here...There...And Everywhere



Arcturus Secured Major Tube Business In Thirty Countries

A SURVEY just completed by Walter A. Coogan, export manager of the Arcturus Radio Tube Company, Newark, New Jersey, shows that Arcturus Tubes amounted to over 50 per cent of the total American tubes imported into thirty of the seventy-six foreign countries in which these tubes are sold.

Mr. Coogan, in completing this survey, used as a basis the figures released by the United States Department of Commerce on exports of American tubes to the entire world. "By adding to our own sales figures the great number of Arcturus Tubes which were sold as initial equipment in the radio receivers of many United States manufacturers, we find that in thirty of the leading countries of the world, more than 50 per cent of the American tubes imported were Arcturus.

"Our distribution abroad covers seventy-six foreign countries and from present indications it appears that by the end of 1932 our exports to most of these countries will be more than 50 per cent of the total imported."

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... Talking About Nerve

C HARLIE CHINN manages the radio department of Capwell's Department Store in Oakland, California. Three years ago a customer bought a Radiola. Someone else had previously owned it for a few days, returned it for credit. Not knowing that it was "second-hand" a salesman resold it as new. Last month the customer moved his furniture to a new home, saw the original purchaser's name on the shipping tag. Went back to Capwell's and complained. Wanted \$30 credit. Got it! And the set today isn't worth \$10. It takes nerve to come back on a dealer after three years have elapsed, but it takes more nerve to give the customer a refund of \$30. Charlie Chinn isn't complaining. Says the joke will do Capwell's more than \$30 worth of good in advertising. If any of you folks 'way out there in Wisconsin have any three-year-old Radiolas laying around, send them to Capwell's. They're worth \$30 these days.

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... Cold Turkey

H ERE'S the experience of a service man who made an absolutely cold canvass, not even using a list of old customers, and found that it pays. Maybe it was because all the radio dealers in his vicinity had decided that such methods are a waste of time.

"Early one morning I started out with my set and tube-tester, my tools, and a complete assortment of tubes. I picked out a street in the residential section of this town and made a call at every house. At each house I offered a free radio inspection service and was surprised to find that about eight out of every ten people accepted the offer.

"In each case I made a short voltage and current check on the set, inspected the aerial

and ground, and made a complete test on all the tubes in the receiver. I followed this procedure with questions regarding the sort of results the owner obtained from his set.

"If the set required no servicing, or no new tubes, I left one of my 'Radiominders' which is a card, carrying space for listing station calls, dial settings and program time and which has on it the name and address of my service company. In the case of sets requiring servicing I quoted the price for the work . . . and where new tubes were needed I gave an actual demonstration by replacing the old tubes with new ones.

"I went down one side of the street and up the other, and did not miss a single house. The first morning I worked four hours, and in that space of time I inspected twenty-one radios, got six repair jobs and sold thirteen tubes at a profit of \$7.25. Furthermore, at every inspection I got the phone number of the set owner, together with the make and model of the receiver for future reference.

" . . . All work and inspections were done in a way to impress the customer and give him or her more confidence in my work."

*Quoted from prize-winning letter by Leon Martin in "SERVICE".

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Time To Spend

I F EVERYONE were like Mrs. F. H. Wallihan, of Ontario, California, it would not be long before all hoarded money was back in circulation again. Fifty years ago Mrs. Wallihan's great-grandfather received a \$20 gold piece from her great-great-grandfather. It was given to her mother in 1915 and a few weeks ago it was passed on to Mrs. Wallihan. She promptly bought a Telechron-motored electric chime clock and presented the \$20 gold piece as part payment.

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Less Work For Musicians

A NEW YORK musician has devised a sound amplification system which he claims will produce the effect of a full symphony orchestra, although a number of string instruments are eliminated.

Instead of utilizing the usual large number of first and second violins, only two first and two second violins are employed. Each violin is equipped with a Universal model "W" watchcase type microphone, attached to the bridge of the instrument.

In addition, two large model "LL" Universal microphones are used to pick up the orchestra as a unit. Only a single amplifier is necessary. The number of speakers, as well as their arrangement, is determined by the acoustical conditions of the auditorium.

There is a mixer between the microphone and the amplifier, which permits separate volume control for each of the six microphones. In this way, the volume of the four violins may be amplified above that of the other instruments, to a great extent as desired.

Using this plan, the orchestra is under the direction of a leader who directs the musicians and also controls the mixing panel, increasing the volume of the first and second violins as

compared to that of the other instruments, to give the effect of a complete symphony orchestra and also to suit his individual interpretation of the way in which the selection should sound. Modifications of the above plan have been suggested, whereby additional microphones could be used to supplant a greater number of musicians.

C.B.S. Puts Limit On Advertising Announcements

T HE basic purpose of a policy permitting price mentions on commercial programs over the Columbia Broadcasting Network is fully set forth by William S. Paley. This purpose, which is, in sum, to reduce the length of "sales talks" on the air, is reflected in the ratios of commercial continuity to program length, quoted here from Mr. Paley's statement:

"The advertiser shall be entitled to mention price in his program, within the following limitations:

(a) Not more than 2 price mentions on a 15-minute program, provided that:

—the total length of all 'sales talk' shall not exceed 1½ minutes.

(b) Not more than 3 price mentions on a 30-minute program, provided that:

—the total length of all 'sales talk' shall not exceed 3 minutes.

(c) Not more than 5 price mentions on a 60-minute program, provided that:

—the total length of all 'sales talk' shall not exceed 6 minutes.

It is understood that these price mentions will be the price or prices of the article or service advertised, and that no competitive or comparative prices are to be mentioned.

Westinghouse Buys 4,000,000 Pounds Of Copper

O RDERS for four million pounds of copper, an amount far in excess of current business demand have been placed by the Westinghouse Electric and Manufacturing Company, according to an announcement by F. A. Merrick, president of the company.

"The world isn't finished," stated Merrick, "and as electricity plays such a large part in our lives today, we are hopeful that even these large reserves of copper will shortly need replenishment."

Norge Sales Up 108%

SALES of Norge Rollator Refrigerators during September were 108 per cent of the August sales, according to a statement issued by Howard E. Blood, president of Norge Corporation, and first vice-president of Borg Warner Corporation, the parent company.

How 48 Store Owners Make Friends

THROUGH its stock control records, a store in New York, N. Y., has discovered that \$1.95 attracts many more purchasers than does \$2.00; that \$1.38 has much greater appeal than \$1.35; and that hosiery can be sold much more readily at 55 cents than at 50 cents.

It was pointed out that this illustrates that odd prices are not necessarily cut prices. Other interesting examples of this fact have since come to light. One merchant had been selling hair nets at 15 cents. Sales were slow. He changed the price to 2 for 31 cents, and his sales jumped immediately. A grocer who had been selling a bottle of sliced pickles for 25 cents found that he could sell a great many more after he had changed the price to 27 cents.

Does Courtesy Pay?

A RETAILER tried an experiment in courtesy. On a certain day, he had his employees show only ordinary courtesy to customers. The average sale that day was 28 cents. The next day he instructed his salespeople to extend such courtesies as calling the customer by name, showing a special interest in helping him to find the article that would best meet his need and accompanying him to the door. That day the average sale was 90 cents.

Diagramming Neighborhood

A SOUTHERN retailer made a diagram of his neighborhood, placing his store in the center. He then listed the names of the occupants of all houses within a radius of several blocks. He checked off on this list the names of those who were not buying from him. Then he began a campaign to solicit their business, stressing quick delivery and good service, and asking them to give him a trial. It is reported that his business soon increased by 30 per cent.

Acknowledging Recommendations

DURING the course of a sale to a new customer, the salesperson in an Oregon store asks: "Who recommended us to you?" In most instances, this store finds that some regular customer is named. The regular customer then is thanked by the store, either verbally or by letter. The new customer, also, is asked politely to recommend the store to his friends. The store has found the plan to be very successful.

★ NOVEL ideas which have been used successfully on various occasions by retail merchants to stimulate business and give an attractive turn to their selling, are set forth in a new report entitled "How 48 Store-Owners Make Friends", published by the Policyholders Service Bureau of the Metropolitan Life Insurance Company. This booklet is the result of an examination of several hundred simple and effective methods of building goodwill and promoting sales as outlined during recent years.

The Introduction to the report points out that while every merchant knows that running a store profitably requires something more than a series of "stunts", he likewise realizes that "if he can do something original now and then, inject a fresh idea, or extend some little service or courtesy—people will like it. They will remember him, and come oftener to his store." The ideas are simple and of the kind which may be applied by almost any type of store. They don't require that the store depart radically from past practice, and for the most part, they call for little or no additional expense. Here are a few excerpts from the book:

Following Up Lost Sales

Often a customer will ask for merchandise that is not in stock, but that has been ordered. In such instances, a Colorado store has its salespeople take a Government post card and immediately write on the front side of the name and address of the customer. On the other side of the card appears the following:

The about which you inquired on have arrived and you can now obtain them.

The card is dropped, in the presence of the customer, into a special box. When the merchandise arrives, the cards in the box are thumbed over and those pertaining to the articles received are at once filled in and mailed.

Encouraging Customers To Complain

Was everything in first-class shape? If not, please telephone us. Our number is

These words are typed upon slips of paper and inserted in all bags and parcels sent out by a Western store. Many customers have commented favorably on this practice.

Gifts For Customers Who Are Ill

A RETAILER in Rochester, New York, is building goodwill and increasing sales by sending a basket of fruit to any customer who is reported ill.

Getting Tomorrow's Trade

AFTER he has finished wrapping a parcel, an Eastern merchant rubber-stamps it as follows:

Will you be in tomorrow?

Immediately the customer's curiosity is aroused and he generally asks, "Why?" The question gives the merchant an opportunity to tell the customer about some "special" he is offering the next day.

Cashing Christmas Savings Checks

THIS retailer is reported to have increased his holiday trade 157 per cent by featuring his willingness to cash Christmas savings checks for customers. Display cards announcing that such checks would be cashed were placed in the show windows. Notices also were sent his entire mailing list, together with a list of items at prices well within the range of all savings checks. The underlying idea was that customers getting their checks cashed would look at the Christmas displays, or, if they owed money, probably would pay their bills.

Daily Posting of News Attracts Trade

A MERCHANT in a small town was able to attract many new customers and increase his sales to old customers by posting the day's latest and most interesting news on a blackboard mounted on a showcase inside the store.

Here Is Proof That the Farmer Will Buy a Modern Radio

THE farmer is brought into the limelight in Printers' Ink as an important but somewhat neglected customer for modern battery radio receivers. Quoting from the article, which is entitled "Yet They Tell Us the Farmer Can't and Won't buy":

"Some 10,000,000 American homes are unwired. These homes either have no radios or depend upon the old inefficient sets which were in vogue five years ago. All of the radio manufacturers have concentrated on improving their A. C. sets and the farmer has been forgotten. A neglected market of 10,000,000.

"Now, however, the manufacturers are waking up to the possibilities of the Air Cell radio. Some of the leading radio manufacturers are going after that neglected market.

"But will the farmers buy? Have they the money? Well, one manufacturer did 10 per cent of his business last year in Air Cell sets. Several others are planning large advertising campaigns this fall in the farm areas.

"And the sets are selling like hot cakes. Here is some evidence of the eagerness and ability of the farmers to buy when they are offered something they want and need. They have been deprived of the benefits of improved radio until now and they are anxious to hear modern radios in their homes.

"Six dealers in Eldorado, Union County, Arkansas, a town of less than 4000 population, during a period of about five months sold 239 battery receivers at an average installed price of \$125 each! If you want proof, here are the names of the dealers and the figures:

E. B. Garrett Co.....78 sets
American Furn. Co. ..66 sets

Bensbergs Music Shop.....	41 sets
Hanna and Company.....	31 sets
Shilling Furniture Company.....	20 sets
McWilliams Hardware and Furniture Company	3 sets

"These sales were all made with practically no effort on the part of the dealers. As one of the dealers puts it, 'Customers came into the store and literally took them away from us'.

"The McWilliams store sold only three because of the failure of the manufacturer of the particular make of receiver he carried to supply it.

"This fall these dealers, and others all over the country, are going to really sell radios. One of the Eldorado dealers is putting a couple of extra sets in the delivery truck every time he installs a set. He demonstrates these in the front yard of neighboring farmers and not once has he brought any of the sets back to the store with him.

"The calamity howlers would have us believe that the farmer hasn't any money. The farm-relief-crazy politicians could prove to you that there is no market for anything except the barest of necessities in Eldorado and Paducah, in Herkimer and Pleasantville. Yet these six merchants did nearly \$30,000 worth of business in a few months, with little or no effort, all on one product.

"Radio manufacturers have found that there is latent buying power in Eldorado. And the town is only one pin-head on the marketing map.

"There are literally thousands of Eldorados."



SETS FOR FARM USE
will be described in detail in
January "RADIO."

A section of the newly inaugurated BUYERS'
GUIDE will be devoted to this type of
merchandise.

FINANCIAL NOTES

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General Electric Profit for 9 Months Is \$9,726,395.22

SALES billed by the General Electric Company for the first nine months of 1932 amounted to \$113,049,474.95, compared with \$206,138,967.01 for the corresponding period last year, a decrease of 45 per cent, Gerard Swope, president of the company, announced.

Profit available for dividends on the common stock for the first nine months of this year was \$9,726,395.22, compared with \$30,753,850.14 for the first nine months last year. This profit is equivalent to 34 cents per share for nine months of 1932 and \$1.07 per share for the corresponding nine months of 1931, on 28,845,927 shares outstanding in both periods.

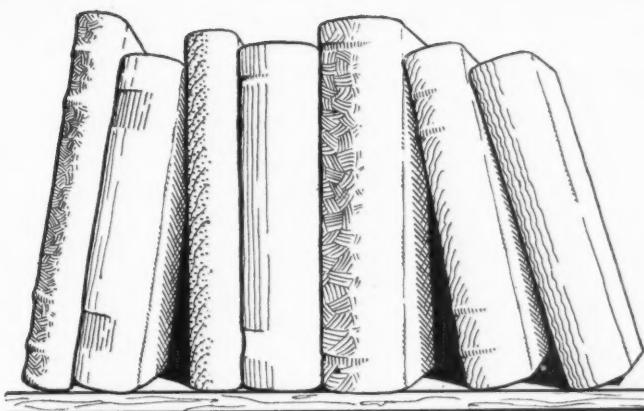
	1932	1931
Net sales billed.....	\$113,049,474.95	\$206,138,967.01
Less: Costs, expenses and other charges....	108,844,670.15	183,015,401.77
Net income from sales	4,204,804.80	23,123,565.24
Other income, less in- terest paid and sun- dry charges	7,452,863.52	9,561,535.50
Profit available for dividends	11,657,668.32	32,685,100.74
Less: Cash dividends on special stock.....	1,931,273.10	1,931,250.60
Profit available for dividends on com- mon stock (28,845,927-36/100 shares issued)	9,726,395.22	30,753,850.14

The October dividend of 10 cents per share on common and 15 cents per share on special stock will be distributed to 178,579 stockholders, compared with 139,697 a year ago.

Orders received by the General Electric Company for the first nine months of 1932 amounted to \$94,374,114 compared with \$202,700,016 for the corresponding period of 1931, a decrease of 53 per cent.

Comparative statement of sales and earnings for the nine months are shown above.

RADIO FOR NOVEMBER



New Books That Every Merchant Needs

Radio Noise Booklet Advises Owners To Consult Dealers

A 24-PAGE booklet on Radio Noises, Their Cause and Cure, is being offered to radio owners through the Sylvania radio program. It is cleverly illustrated with humorous thumb-nail sketches, and presents in a clear, easily understood manner the different types of noisy radio reception, with suggestions for getting rid of them.

The causes of noisy reception are divided into three classes—natural static, man-made static and internal set disturbances. The section dealing with man-made static lists the various electrical appliances and mechanical devices that are most frequent offenders in causing radio disturbance. By consulting this list and comparing it with the particular type of noise developed in the radio set the owner can play "amateur detective" to the extent of determining the probable cause of the trouble. It is not suggested that such trouble can be remedied by amateur methods.

Under "Internal Set Noises" the radio owner is told to suspect weak or defective tubes when the radio is misbehaving. An accurate test of all tubes by a reliable dealer is suggested as the first step toward a cure, and inspection for the set by a reliable service man is recommended.

The story of Sylvania Set-Tested tubes is told in such a way that the customer will appreciate the extreme care used in every stage of manufacture, from the selection of raw materials to the final test. Testing "For a set like yours" is emphasized, as well as the fact that there are no "seconds" bearing the Sylvania Trade Mark.

In the back of the book is a Tube Record card, to be kept by the radio owner. It provides space for tube types, date purchased, test date, and date of replacement.

The purpose of the Noise Booklet is to call attention to the fact that it is not necessary to endure disagreeable radio noises—not to suggest that the radio owner can cure these disturbances by tinkering with the radio set himself. He is urged to call a reliable dealer and a competent service man into consultation when his radio misbehaves. Too often the service call is delayed because of a belief that it will be too expensive or will involve too much delay and trouble. We believe that this booklet will correct that impression, and will encourage radio owners to call in the service man when trouble develops.

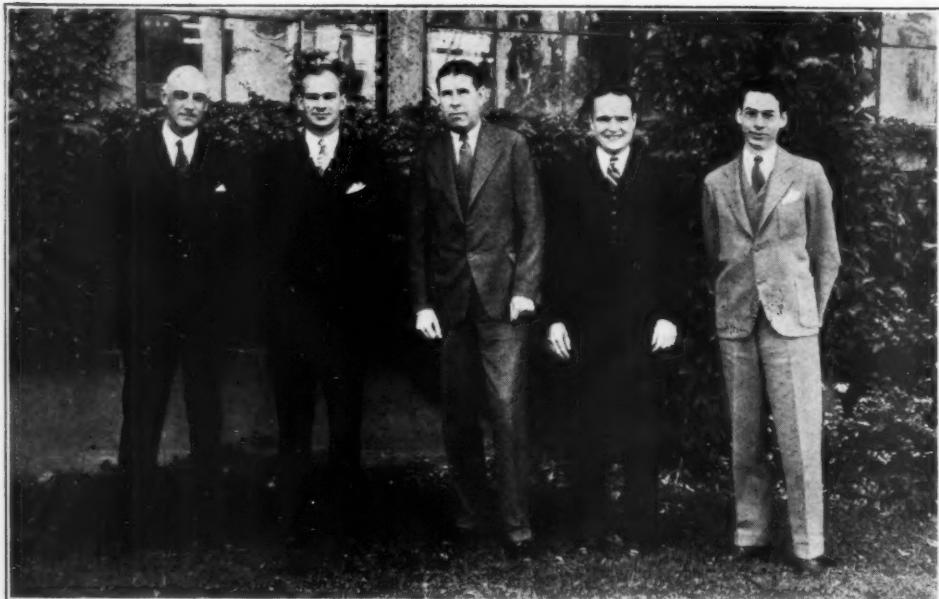
Since the first offer of the booklet, during the week of July 4th, thousands of requests have been received from almost every state in the Union, from Cuba, Canada and Mexico.

While the Noise Booklet was written with the radio owners in mind, much of the information is valuable to dealers and service men. Distribution of the booklet will be confined to radio inquirers, but single copies may be obtained by request to the Advertising Department, Hygrade Sylvania Corporation, Emporium, Pa.

How To Build Crystal Sets

A BOOKLET showing constructional features, wiring diagrams and giving simple explanations on how to build inexpensive receiving sets, is being prepared to satisfy a demand in the trade for such a book. Ready for distribution on December 20th. Published by "RADIO." Retail price, 25c per copy.

PICTORIAL RADIO



New Howard Radio Executives

AN ENTERPRISING news photographer secured this photograph at the Howard Radio factory, South Haven, Michigan. Left to right: John H. Parnham, Vice-President and General Manager; Howard W. Sams, General Sales Manager (formerly with Silver-Marshall, Inc.); James L. Barron, Plant Manager; Howard C. Briggs, Assistant Sales Manager (formerly with Silver-Marshall, Inc.); Burton Browne, Advertising and Sales Promotion Manager (formerly with Silver-Marshall, Inc.). Just before the cameraman snapped the shutter, someone asked Jim Barron what was wrong with the football team representing his Alma Mater, the University of Illinois. Mr. Barron is temporarily suppressing his reply.

Howard Appoints More Old Silver-Marshall Representatives

HOWARD W. SAMS, General Sales Manager of the Howard Radio Company at South Haven, announces the additional acquisition of the entire old Silver-Marshall sales organization. F. C. Howard is District Sales Manager in New York State, with headquarters at Syracuse; Frank A. Baumgarten, District Sales Manager in Western Pennsylvania, Eastern Ohio and West Virginia, with headquarters at Pittsburgh; Robert H. Campbell, District Sales Manager in Wisconsin, Illinois and Indiana, with headquarters in Chicago. Fred B. Hill and Jack Hedquist, District Sales Managers in Minnesota, North and South Dakota, with headquarters in Minneapolis; Southern Sellers, District Sales Manager in Arkansas, Louisiana, New Mexico, Texas, Mississippi, Tennessee and Kentucky, with headquarters at New Orleans. Don H. Burcham, District Sales Manager in the States of Washington, Oregon and Idaho, with headquarters at Portland.

Eastern District Sales Managers will operate under the jurisdiction of Arthur L. Sullivan, Eastern Sales Manager at New York City, and Western District Sales Managers under Mr. E. M. Jacobson, Pacific Coast Sales Manager at Los Angeles.

Mr. Sams points out that the naming of these District Sales Managers brings to Howard the entire former sales organization of Silver-Marshall, Inc.

E. H. Van Krevelen, formerly District Sales Manager for Howard, with headquarters at Minneapolis, has been promoted to District Sales Manager in the Nebraska, Kansas, Missouri and Oklahoma territory, with headquarters at Kansas City. A. G. Van Syoc, another old Howard man, has been appointed District Sales Manager in the State of Michigan, with headquarters at the factory in South Haven. C. W. Young, District Sales Manager in Rhode Island and Eastern Connecticut, with headquarters at Providence, continues to represent Howard in this area.

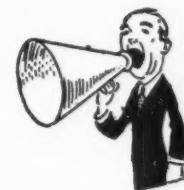
GROWTH—From the unimpressive machine shop illustrated in the upper left sprang this mighty RCA Victor city, comprising thirty-eight buildings, conceded the world's largest plant for the manufacture of radio equipment.



SPECIAL ANNOUNCEMENT

EACH MONTH IN FUTURE ISSUES OF "RADIO" YOU WILL FIND FROM 8 TO 12 PAGES OF "THE RADIO NOTEBOOK."

- Our New Policy Tells You - - - (1) Who Makes It & How To Sell It
(2) Where To Buy It & What It Costs
(3) How To Service And Repair It



For The RADIO NOTE BOOK



CROSLEY



Compiled By Crosley Engineers---Each Month---For "RADIO"

How to Adjust the New CROSLEY Receivers

ADJUSTMENT of intermediate frequency amplifiers of Crosley Receiver Models 95, 129, 129-1, 130, 130-1, 132-1, 133, 134, 134-1, 135, 136-1, 137, 141, 146, 146-1, the peak frequency of all the above models is 181.5 kilocycles.

Connect the terminals of the output meter across the primary winding of the speaker output transformer. The speaker terminals are easily accessible by removing the two screws holding the terminal cover in place and removing the cover.

Connect the high side of the local oscillator through a .05 mfd. condenser to the last I.F. transformer, and the low side of the grid of the tube immediately preceding the oscillator to chassis. Do not remove the clip wire from the grid of tube. Set the local oscillator in operation at the proper frequency, adjusting the local signal to about half scale deflection of the output meter. Turn the volume control on full.

With an insulated adjusting tool, adjust the aligning condensers shunted across the last I.F. transformer for maximum reading on the output meter. Change the high side of the oscillator to the grids of the other tubes preceding the I.F. transformers and adjust these aligning condensers in the same manner. If this operation has been carefully performed the I.F. Amplifier should be perfectly aligned.

Adjustments to the condenser gang is made by connecting the high side of the local oscillator to the antenna terminal of the receiver and the low side to chassis. Set the local oscillator adjustment at 1400 kilocycles and the receiver dial at 1400 kilocycles.

With insulated screwdriver adjust the padding condenser over the oscillator tuning condenser until maxi-

mum deflection of the output meter has been reached. In all late model Crosley receivers this is the rear condenser of the condenser gang. Next, proceed to adjust the other padding condensers to maximum deflection of the output meter.

No further adjustments should be necessary as the condenser gang is so constructed to insure even tracking over the full range of the dial. In the event of improper tracking the condenser split blades may be adjusted to proper tracking by using the oscillator as previously outlined by adjusting the frequency to that of the dial setting on each successive set of split blades.

Meter tuning is used in Crosley Receivers Models 130, 130-1, 146, 146-1, 132-1, and 136-1. The tuning of this meter is independent of the volume control setting, which allows silent tuning with the volume control at minimum position. After the desired station is tuned in by maximum swing of the tuning meter, the volume control may be adjusted to the required volume.

Crosley Models 146, 146-1, and 132-1 employ a manual audio level control as well as a manual tone control. This control allows the reducing of noise level without changing the tone of the received signal.

Difficulty may be experienced in Crosley Models 129, 135, 137 and 141, not operating above 1500 kilocycles. By replacing the type—24-A First Detector-oscillator tube with another of better qualities as an oscillator, police signals at 1712 kilocycles may be received.

For The RADIO NOTE BOOK



PHILCO

SERVICE & TROUBLE SHOOTING INFORMATION



Compiled By Philco Service Engineers---Each Month---For "RADIO"

Description and Operation of PHILCO Automatic Volume Control

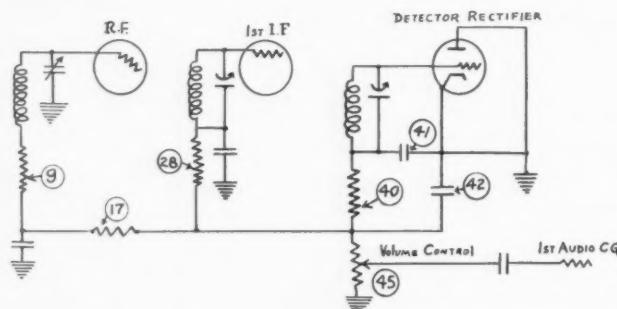
INCORPORATING an A.V.C. system with the use of linear detection, Philco has successfully, and in a simple manner, met the demand for such control since it was first introduced in their Model 95. The same system of linear detection—A.V.C. has been applied to Philco superheterodynes and automobile receivers.

The need for A.V.C. became apparent when the tremendous power reserve of many new power output tubes was released when tuning from a weak signal to a powerful local. A constant output level is very desirable, both to prevent such sudden increases in volume as well as to minimize the varying of volume level due to conditions outside the receiver itself, such as natural fading, destroying of sidebands and other transmission difficulties.

Diode, or linear detection, is a method by which the detector tube functions as a pure rectifier. The characteristics of such a rectifier are such as to make it practically linear in its response. This means that voltages applied to the tube will appear in the output in the same ratio, in contrast to detectors of the "square law" type.

The detector was first termed "Multiplex" by Philco. It is difficult to overload, and by reason of this and its linear characteristics, harmonic distortion is minimized. Having no property of amplification, it was at first necessary to supply this deficit by the addition of a stage of audio amplification called the "Detector Amplifier." With the advent of output tubes of high amplification factor the output of the detector rectifier may be fed directly to the first audio stage without the use of the additional amplifier.

At the time that the signal is rectified, two components are developed. One is the D.C. component and the other is the audio which was impressed upon the carrier. The D.C. which is generated is proportional to the strength of the carrier voltage which is being developed on the diode rectifier. If this D.C. voltage is fed back and allowed to control the grids of the R.F. and I.F. amplifiers, it will tend to make the voltage developed across the diode constant for all signal levels impressed between antenna and ground. The voltage which is generated in the diode contains a certain amount of intermediate frequency which must be filtered out.



SUBJECT FOR DECEMBER "RADIO" . . . PHILCO SERVICE PROCEDURE AND ADJUSTMENTS

Philco Service Bulletins can be had without cost by writing to

PHILCO RADIO & TELEVISION CORPORATION

Philadelphia, Pa., or to the San Francisco Office

Philco would like to hear from every Radio-Trician who is operating an independent Radio service business. It is their desire to contact these service men and supply them with the Philco parts catalog and Philco wiring diagram booklet.

It is hoped that all independent service men and firms who are in accord with this policy will communicate with Philco Radio and Television Corp., 218 Fremont Street, San Francisco, care of Mr. Ivyn I. Farwell, Service Supervisor.

PACIFIC COAST OFFICE:
218 Fremont Street, San Francisco, Cal.
Ivyn I. Farwell
Pacific Coast Service Supervisor

For The RADIO NOTE BOOK



ZENITH
SERVICE & TROUBLE SHOOTING INFORMATION



Compiled By Zenith Service Engineers---Each Month---For "RADIO"

Zenette Service Data Chart

NATURE OF TROUBLE	POSSIBLE CAUSE	REMEDY	NATURE OF TROUBLE	POSSIBLE CAUSE	REMEDY
No signals	A. C. cord not connected to light socket. Defective A. C. switch. Bad soldered joint on A. C. switch. Manual volume control grounded to chassis. Grounded Mershon condenser. High voltage lead grounded at Mershon terminal. Grounded filament lead on automatic volume control. Open 1st detector choke. Open 2nd detector choke. 1st detector pick-up coil open (on oscillator coil). Oscillator plate coil open. Shorted padding condenser (fixed section).	Connect plug to line. Replace. Resolder. Remove and reset spacer washer. Remove Mershon and replace bakelite washer. Space solder lug from chassis. Trace automatic volume control filament wiring and space from chassis where ground occurs. Replace. Replace. Examine leads on soldering lugs on pick-up coil and resolder. If winding is open replace complete oscillator coil. Check soldered connections on oscillator plate coil and resolder if necessary. If coil is open, replace. Test across padding condenser and replace if shorted. If not shorted check for short in oscillator circuit and across oscillator tuning cord.	Manual volume control does not operate	Open or defective 22-121 condenser. Wrong type tube in A. V. C. socket. Defective Z24 A. V. C. tube. Volume control grounded to frame. Open .0001 condenser. Rosin or broken connection on 3 meg. resistor.	Replace. Check with tube layout diagram and correct. Replace. Remove manual volume control and reset spacing washers. Replace. Repair or resolder joint.
			Weak reception	Antenna compensator condenser not set properly. Open 22-107 fixed condenser. Wrong resistor in resistor strip. Receiver out of balance. Poorly soldered joint. Z24 in R. F., 1st det. or I. F. socket.	Reset (see "Balancing"). Replace. Check circuit with resistor and replace with correct value. Rebalance (see "Balancing"). Inspect all joints and resolder where necessary. Correct tube location with tube layout chart.
			Volume drops after manual control is turned past certain position	Defective Z51 tube. Defective 3 meg. resistor. Poor joints in A. V. C. circuit. Defective A. V. C. tube. Wrong type tube in R. F. stages or A. V. C. socket.	Replace. Replace. Inspect all soldered joints and resolder where necessary. Replace. Correct tube position with use of tube Layout Chart.
			Weak on high end	Poor joints on R. F. or oscillator coils. Padder vernier out of adjustment. Wrong type tube in R. F., 1st detector or I. F. stages. Condenser gang off balance. Antenna compensator condenser not set properly.	Inspect all joints and resolder when necessary. Reset padder vernier (see "Balancing"). Correct tube position with use of Tube Layout Diagram. Rebalance (see "Balancing"). Reset (see "Balancing").
Flutter or Motor boating	Open 22-115 condenser. Open 22-111 condenser. Defective 22-121 condenser.	Replace. Replace. Replace.	Dial off calibration	Condenser gang balanced improperly. Dial light mask not set properly. Dial strip shifted.	Rebalance (see "Balancing"). Reset as outlined under "Balancing." Reset dial strip so that its ends exactly meet the dial strip holder ends.
Oscillation	Open 22-115 by-pass condenser. Rosin joints.	Replace. Inspect all joints and resolder where necessary.	Cross modulation (riding in)	Improper setting of antenna compensating condenser. Excessive antenna length. Defective Z51 tube.	Reset as outlined in "Balancing." Shorten until complaint is eliminated. Replace.
Hum	Defective Pentode. Open or broken 2nd detector grid lead. One or both defective Mershons. Open filament center tap lead. Grounded soldering terminal on one or both Mershons.	Replace. Repair or resolder lead. Replace defective units. Repair if broken or unsoldered. If open in transformer, replace transformer. Respace soldering terminal from chassis.	Excessive whistling at different points of dial. (Image frequency response)	Close proximity to powerful broadcast station. Excessive antenna length.	*Reset antenna compensating condenser. Reduce to not more than 50 feet including lead-in.

*In extreme cases it may be necessary to unscrew the antenna compensator knob slightly farther than the resonant setting.

for The RADIO NOTE BOOK



MAJESTIC SERVICE & TROUBLE SHOOTING INFORMATION



Compiled by
M. T. Nordengren, General Service Manager, Radio Division, Grigsby-Grunow Co.

Majestic Automatic Synchro-Silent Tuning

WHEN the dial of an ordinary receiver which has incorporated in it an efficient automatic volume control circuit is tuned between stations, the sensitivity of the receiver is very high. In noisy locations, therefore, an automatic volume control set of the standard type might be open for considerable unfavorable reaction, because of the background of "hiss" and static heard when tuning between stations. For this reason many automatic volume control receivers in the past have had on them a push button or switch known as a "Speaker Mute." Usually this device simply short circuits the voice coil of the dynamic speaker so that the signals are very much weakened. Instructions are given that this "Speaker Mute" should be operated whenever the set is tuned between stations. Obviously this remedies the difficulty, but is an undesirable operation, and likewise is very difficult to explain.

It is now easy to see how the new MAJESTIC Synchro-Silent Tuning is quite unique and original. It was decided that since silencing of the radio set was desired between stations, the best place to accomplish this would be in the audio amplifier stage between the second detector and output. For this purpose one of the new Type G-57-S tubes is used in the first audio stage, because of its sharp grid voltage cut-off characteristic. By inserting a high negative bias in the suppressor grid circuit of this tube, the tube is "blocked out" and no signal will come through.

To obtain this, a type G-57-S or G-58-S tube is used as a Synchro Tube. This Synchro Tube obtains its plate supply through a resistor which is in the suppressor grid circuit of the audio amplifier. The Synchro tube obtains its grid voltage from the Automatic Volume Control Bias Resistor. When there is no station tuned in, there is no Automatic Volume Control voltage, and hence the grid of the Synchro tube is approximately at zero bias. This causes its plate to draw current through its plate resistor. The voltage drop across this Resistor biases the G-57-S audio amplifier tube so high that the audio amplifier is "blocked out," and hence no noise comes through.

When a station is tuned in, Automatic Volume Control voltage develops across the Automatic Volume Control bias resistor and this Automatic Volume Control voltage is impressed in the form of a negative bias on the Synchro Tube. The plate of the Synchro Tube now draws little or no current, and hence the bias across its plate resistor disappears, leaving nothing but the normal op-

erating bias on the audio amplifier tube. In this condition the entire set is operative, just as though there were no Synchro Tube in the circuit. In fact, it is possible to tune in a station, remove the Synchro Tube and notice no difference. On the other hand, if this tube is removed when no station is tuned in, the customary interstation noises are heard. Because of the variation in antennae and noises in different locations, it is necessary to provide a control to govern the point at which the Synchro Tube takes hold. For this purpose a potentiometer (usually 20,000 ohms) is included in the screen grid circuit of the Synchro Tube.

There are certain precautions necessary in setting the value of this potentiometer as follows:

1. Complete the installation in the same manner as an ordinary broadcast receiver so far as antenna, ground, tubes, etc., are concerned.
2. Set Synchro-Silent Tuning Knob to position of no silencing. (All the way clockwise when facing Synchro-Silent Tuning Control.)
3. Tune receiver to a position off the broadcasting station, preferably near the low frequency end of the dial.
4. Turn volume control full on. In this position a great deal of noise will be heard; the amount depending upon the location.
5. Adjust the Synchro-Silent Tuning Control by rotating counter-clockwise slowly until the noise just stops. It will be found that the noise drops out quite suddenly, and it is desirable that the control be turned only to the position required to take out the noise and no further counter-clockwise than necessary.
6. The set is now ready for operation, and it will be found that stations come in with just as much volume as they would if the Synchro-Silent Tuning were not used, but when tuning between stations, the set is absolutely quiet. It may be found that in some particular locations the noise is greater at one end of the dial than at the other, so that if the Synchro-Silent Tuning Control is adjusted to take out noise at the low frequency end of the dial, some noise may come in at the high frequency end. In this case, it is perfectly permissible and advisable to readjust the Synchro-Silent Tuning Control at the high frequency end of the dial.
7. If at any time it is desired to get maximum distance without regard to noise between stations, simply turn the Automatic Synchro-Silent Tuning Control knob as far clockwise as possible.

for The RADIO NOTE BOOK



TOBE FILTERETTE INTERFERENCE ELIMINATION PROBLEMS SOLVED



Compiled By Tobe Deutschmann Engineers---Each Month---For "RADIO"

Relief from Radio Noise

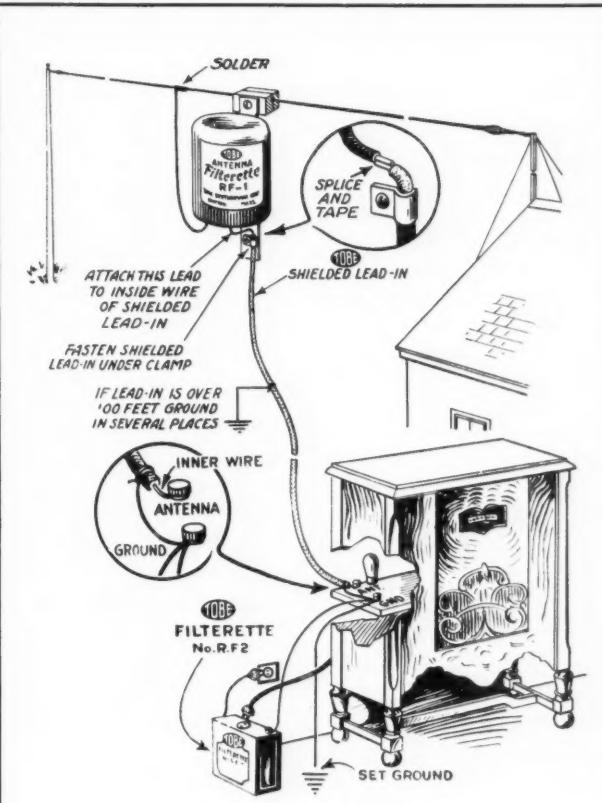
A NEW noise eliminating system, for installation at the radio receiver, is now being featured by the Tobe Deutschmann Corporation, Filterette Division. The Filterizer Kit, as this system is called, is designed for use in locations where objectionable radio noise is being broadcast from unknown sources or from apparatus that cannot conveniently be filtered. As much of the interference now heard is in the latter class, the Filterizer appears to fill a long-felt want for "something to go on the radio set."

In operation, the Filterizer depends upon fundamental principles of good radio installation practice. It is known that a great deal of radio noise is picked up on inside antennae or upon lead-ins which are in relatively close juxtaposition to electric wiring circuits in the building in which the receiver is installed. As it is generally impossible to provide sufficient physical separation between the lead-in and the building wiring to avoid the coupling that results from this relationship, the Filterizer provides this separation electrically by utilizing the shielding effect of metal-braid covered lead-in wire, termed "Filterized" lead-in wire.

In addition to preventing pick-up of noise on the lead-in wire, the Filterizer kit keeps disturbances, that are present on the power line, from entering the receiver through its line connection. This is accomplished by installing a specially designed line Filter, the Filterette RF-2, as shown in the diagram.

As early work with shielded lead-in systems gave unsatisfactory results due to the mismatching of impedances, the makers of the Filterizer kit have taken these facts into consideration and have provided an impedance matching unit, RF-1, to avoid the excessive signal loss that results from incorrect matching of impedances.

In some cases it may be desirable to use a second impedance matching unit at the receiver. This unit is avail-



Showing Method of Installation of
Complete Tobe Filterette

able and is known as the RF-4 unit. It is only recommended where too great a loss of signal strength is experienced.

The Filterizer kit is backed by the years of research on noise elimination that have made the Tobe Deutschmann Corporation the acknowledged authority on radio interference. The various bulletins used by the Tobe Deutschmann Corporation on filterizing principles should be of great value to dealers throughout the country.

WATCH THIS PAGE EACH MONTH FOR FILTERETTE INFORMATION

THE publishers of "RADIO", realizing that the problem of interference elimination is today regarded as one of the all-important issues in the satisfactory operation of radio sets, take pleasure in announcing that the TOBE FILTERETTE will

be published complete in each issue of the magazine. From this information you will help keep your merchandise SOLD. Furthermore, the installation of proper FILTERETTES enables you to make an added profit from the initial sale, not to mention the vast

number of FILTERETTES that can be sold to all those who now own radio sets. Interference problems from our readers are solicited. Send them to the editor and your questions will be answered promptly in these columns of the FILTERETTE section of THE RADIO NOTE BOOK.

for The RADIO NOTE BOOK



CLARION



Compiled By R. MacGregor, Sales Engineer, Transformer Corporation of America---Each Month---For "RADIO"

CLARION Service and Trouble Shooting Data for November

Q. What causes the Model 300 to become microphonic in operation?

A. The Model 300, when packed at the factory, is equipped with two wooden shipping blocks which fit under the chassis to support the weight of the chassis from the rubber pads during shipment. These shipping blocks should be removed at the time of installation or demonstration. They cause the set to be microphonic.

□ □ □

Q. A noise like static is noticed on the Models 260 and 280 sets; it decreases but does not disappear when the aerial is disconnected. What causes this?

A. A defect in the base of the pilot light bulb may be causing a spark which is radiating and being picked up by the lead-in and grid leads. Replace the pilot light bulb.

□ □ □

Q. Reception on part of the broadcast band, either at the higher or lower limits of tuning is weak or missing entirely on the Model 220 six-tube super. What causes this and how can it be corrected?

A. Quite possibly the oscillator is not functioning over its entire range as efficiently as it should, due to a change in the characteristics of the type '24 autodyne tube. Replace this tube to remedy the condition.

□ □ □

Q. After connecting up the replacement chassis type 260C—in modernizing an old set—results were poor and one of the speakers does not seem to operate. Does this indicate a defect in the speaker or chassis?

A. Probably the link connection between the field and voice coil on the second speaker has been overlooked in making your connections. On the original run of instruction cards this link connection does not show up as clearly as the other wires to the speaker do.

□ □ □

Q. Just received the new 12-tube console; the muting control knob can be rotated continuously without affecting performance; do I need a new one?

A. This control is a push-button switch and should be depressed to permit quiet in-between-station tuning. It does not operate like a volume control.

Q. Do your receivers have a static rejection feature?

A. The Models 300, 280 and 260 consoles have this feature. The second detector is specially biased so that it does not operate on normal static, but responds instantly to a steady receivable signal within the wide range of these receivers. Normal static amplifies to the second detector at a value seldom above five volts; almost all receivable signals amplify to the second detector at a value of seven volts or over. Proper adjustment of bias effects this result.

□ □ □

Q. The model 300 seems to have just as good tone at low volume as it has a high volume. Is this due to any circuit refinement?

A. The Model 300 has the feature termed acoustic compensation. The average receivers tone quality at low volume seems to be missing the high and low tones, the middle register predominating. The model 300 has a tuned circuit at the first audio grid operating from the volume control and suppressing middle register response at low volume and exaggerating the higher and lower tones, resulting in tone uniformity at any volume setting.

□ □ □

Q. Is the Model 280, twelve-tube superheterodyne a non-overloading receiver?

A. The Model 280 cannot overload under ordinary conditions of operation. The double detectors, quadruple out-put tubes and twin speakers make non-overloading a feature of this set.

□ □ □

Q. What is the purpose of the noise suppressor control on the Model 300?

A. The noise suppressor control of the Model 300 is intended to be adjusted for your local noise of interference conditions and your aerial characteristics. After installation the set should be tuned between stations with the volume control advanced. Then the noise suppressor control should be retarded until local interference noises are reduced to a comfortable minimum. The noise suppressor control need not be further adjusted from here on, except in those instances where extremely distant stations are being sought after on the air.

for The RADIO NOTE BOOK



RCA-VICTOR



Compiled By J. E. Jones---Each Month---For "RADIO"

Proper Adjustment of RCA-VICTOR Bi-Acoustic Circuits

MANY requests come to us regarding the proper adjustment of the Bi-Acoustic Circuit, and while the circuit contains a multitude of new features, the adjustment of the various circuits remains fundamentally the same as for any simple resonance circuit.

The circuit contains a double intermediate frequency channel, one for the signal feeding, the second to supply the AVC tube.

In the older Bi-Acoustic models the AVC tube was an RCA-56 with its I.F. channel untuned, in the latter models which also include the automatic combination, RAE-84, the AVC tube is an RCA-55 with a partially tuned channel.

THE intermediate frequency is 175KC, and for correct adjustment of the receiver an oscillator calibrated at 175KC, as well as the usual 1400 and 600KC should be provided. It is also advisable that the output of the oscillator be made variable. An output meter is also necessary. We recommend a thermo-galvanometer current-squared meter, 115 mils full scale, and if the signal intensity is regulated so meter reads about half scale when adjustment is started, a very fine adjustment can be obtained, due to the current curve of the meter. The meter can be clipped directly across the voice coil of the speaker, thereby using the speaker as a monitor.

The adjustment of the RF trimmers is the first step in the procedure. This should be done at 1400KC. The high frequency oscillator trimmer should also be made at this frequency.

PROCEDURE—Turn volume control on full, set receiver dial at exactly 1400KC, adjust oscillator output until about half reading on meter is obtained. The three adjustments for this frequency, high frequency oscillator; 1st detector input, and RF input will be found underneath the chassis. This can be adjusted with a 5 Spintite or equivalent wrench. The oscillator trimmer is nearest the back of the set; the detector input in the center, and the RF, forward. The adjustments should be made in the above mentioned sequence and all to maximum response.

The oscillator should now be set at 600KC and the 600KC trimmer adjusted to maximum, at the same time rocking the tuning control. The 600KC trimmer will be found on top of receiver near antenna coil.

Now set modulated oscillator at 175KC, remove oscillator tube from set (extreme right hand RCA-56 from back of set), and adjust signal strength, still keeping volume control at maximum. Turn suppression control on newer models extreme counter clockwise position, thereby opening suppressor switch. Now adjust secondary and primary of second I.F., then first I.F. to maximum response. Then repeat operation as circuits are somewhat interlocking.

Now close noise suppressor switch by advancing slightly clockwise until click occurs, but no further. The single suppressor circuit should now be adjusted to maximum.

THE set should now be of maximum efficiency but it is advisable to repeat the R.F. and oscillator adjustments, as all these adjustments are to a great extent interlocking.

It should be remembered that while all sets leave the factory in reasonable adjustment, many can be improved by individual attention, and in many cases an accurate adjustment will overcome certain conditions due to location, and the slight added advantage may clinch a sale.

Questions and Answers

Q. In technical magazines I have seen many circuits using the 55 Radiotron, all of them have been various forms of detectors with or without AVC. Why isn't it used as a detector in the new R-78?

A. In the new R-78 the 55 tube is used as AVC, and noise suppressor. It is fed by I.F. line, that is, the signal is amplified through a 58 tube and one I.F. transformer. In the older models this AVC, I.F. transformer was untuned, and fed a 56 tube direct as straight AVC. In the newer models the untuned primary of this transformer supplies voltage to operate the AVC circuit, while the secondary (sharply tuned) supplies the voltage used to operate suppressor circuits.

Q. What is the function of the switch on the back of the RCA Bi-Acoustic Models?

A. This receiver is so designed that it will respond to exceedingly low tunes to the neighborhood of 35 cycles; this allows the reception of the 60 cycle ripple inherent in some broadcasting stations. This switch decreases the true fidelity of the receiver to a point where it just reproduces about 70 cycles, thereby eliminating the reception of the aforesaid hum.

Q. What is meant by Tone Compensation as referred to in sales literature on the new RCA-VICTOR radios?

A. The human ear does not respond to all frequencies equally at different volumes. Therefore, while you would hear all of the tones while listening to a full orchestra, when you reduce such an orchestra to low volume in your home you fail to hear the lows and highs at the same proportion to the middle register as was intended by the composer. RCA-VICTOR compensates for this by absorbing the middle register at the same proportion as the average human ear loses the highs and lows.



Roger Wise

TUBE CHATS

By Roger Wise

Chief Engineer, Radio Tube Division
Hygrade—Sylvania Corp.

Trouble Ahead If Mercury Vapor Tube Is Improperly Used

WITH the announcement of a Full Wave Mercury Vapor Rectifier tube employing a 5 volt filament, it becomes necessary to again warn servicemen and others engaged in servicing radio sets to refrain from attempting to use this new 5 volt Full-Wave Mercury Vapor Rectifier tube to replace the 280 tube.

In last month's issue of Sylvania News a warning was published against attempting to use the 82 as a substitute for the Type 80. In order to do this, of course, since the 82 has a 2.5 volt filament, it is necessary to make some slight adjustment in the receiver as to voltage supplied to the rectifier tube.

With the new tube, however, since it also employs a 5 volt filament the same as the 80, much damage may be done by inserting the tube in the 80 socket without thinking. If this is done, providing nothing burns out in the receiver or blows up, the receiver will give considerably better performance than it did in the past. This performance, however, is not likely to last long, since the increased voltage will sooner or later blow one or more of the filter condensers in a power unit. If this condenser simply opens up, a very loud and annoying hum will result. If, however, as is more than likely to occur, the condenser shorts, the power transformer in the receiver will be burned out unless the tube is instantly removed from the receiver. In addition to this, if anything should happen to the tube for even an instant it is quite likely that it would burn out the transformer before the tube could be removed. For this reason practically all receivers which are designed to employ the new Mercury Vapor Rectifier tube are provided with a fuse, so that in the event of any momentary tube failure the fuse will be blown instead of ruining the power transformer.

In the past there has been some advertising which recommends the substitution of a Mercury Vapor Rectifier tube for the Type 80 tube which is now in the receiver. This type of advertising is extremely short sighted, since its only ultimate object is to sell a considerable number of these tubes without regard for the difficulties which will confront

the prospective user of these tubes. A safer way, if you are not satisfied with the performance of your present receiver, is to buy a new receiver which is equipped with the new and modern tubes rather than to attempt to change the receiver over to haphazardly use some of the new tubes. This sort of change is much like the change which often is made with the Model T Ford of substituting a Model A hood and expecting your car to run as a Model A or a Model B car does.

■ ■ ■

How Can I Sell More Tubes?

WE believe that the answer to this question is a fairly simple one—and in giving our answer we're likely to kill a few of the sacred cows of this business.

Today, 90% of the effort being expended in the tube industry is aimed at getting a larger share of the existing market, and very little indeed is spent for increasing the total tube market.

There are about 17,000,000 sets in use today. Taking an average of 7 tubes per set there is a total of 119,000,000 tubes. In order to avoid any criticism of the figures let us be very generous and deduct the replacement tubes sold for the last 2 years, (about 60,000,000) so that obviously the market for replacement tubes during the next year is about 59,000,000 or just about twice what will be sold according to present indications. Present activities such as manufacturers' advertising, dealers' window displays, and direct mail may result in an extra 5 or 10 percent being added to total sales, but that is all.

What's the answer? Just one thing—house-to-house selling. Since it has been demonstrated that a large percentage of set-owners will put up with mediocre or even very poor reception rather than take the trouble to buy new tubes—then they must be sold new tubes.

It is a foregone conclusion that new tubes in the 59,000,000 sockets referred to above will sell themselves as soon as they are demonstrated.

This is not a theory. We have seen it with our own eyes, and we can furnish you with names, dates and data. A reasonably intelligent man equipped with a good testing

meter, and calling from house to house in medium class sections, can make a good living. If this man is equipped with a properly compiled list of prospects he can do even better. And don't forget that this same man who can pay his way on tube sales, can hardly avoid exposing himself to set prospects, refrigerator prospects, etc.

It is to be expected that some dealers who read this—or maybe those dealers will not read this far—will yawn and lean back in their chairs and go on complaining about business. Yet we believe that a lot more have already seen the light or are about to get a good look at it. In the hands of these men lies the future of the tube industry, and future profits for their own stores. The choice of which group you will be found in is up to you.

QUESTIONS and ANSWERS

Question 1.—Why does the 89 have a top cap while the 59 does not?

Answer—The 59 is equipped with a 7 pin base. The 89 employs a 6 pin base and the extra connection is brought out to the top cap. The 7 pin base is too large for the small tube.

Question 2.—What is a "driver" tube used for Class B amplifiers?

Answer—A "driver" tube is simply a stage of audio amplification which is designed to supply sufficient power to excite the Class B tubes properly.

Question 3.—Is there a tube similar to Type 39 in the 2 volt battery group?

Answer—The Type 34 is an R. F. pentode and is quite similar to Type 39, although the maximum bias required for cut-off is —22.5 volts instead of —50 volts.

Question 4.—Why isn't it possible to place two tubes in one bulb for push-pull service?

Answer—It is not safe to do this usually because the steady plate current with or without signal is so high that the temperatures become excessive. In Class C amplifiers this can be done, however, because the steady plate current is very low and hence the operating temperature is low. Types 19 and 79, recently announced, are examples of two Class B tubes in one bulb in the 2.0 and 6.3 volt lines, respectively.

Question 5.—Can I change my . . . receiver for Class B amplifier?

Answer—Satisfactory operation cannot be obtained since the regulation of the power supply will not be steady enough to maintain constant voltage for the varying plate current drain. In addition to this the transformers are not suitable for Class B work. Class B operation can only be satisfactorily obtained with an amplifier system designed for that service.

The Answer to Your Service Problems

MR. FLOYD FAUSETT, Chief Engineer of Supreme Instruments Corp., Contributes This Page Each Month.

This Month Mr. Fausett Tells You—

How to Sell Service What to Charge for Your Work How to Secure New Prospects



ONE of the problems which confront even the best of radio servicing establishments is that of business policies. Many radiomen start their business by offering free service calls. Such policies are usually disappointing, because the public generally feels that there is a hook concealed in anything offered free, and the response is poor. Furthermore, the bad effects of such policies are more general in that radio service is cheapened in the public estimation. However, it is not always the beginner in radio service who offers radio service free. Some of the older servicemen become alarmed with the cheaper competition, and offer free tube checking and repair estimates in customers' homes; others offer these service baits because of the competition of cut-price tube outlets which offer free tube checking facilities. It is believed that the best way in which to meet competition is to (1) offer better service at reasonable and fair prices with (2) better business methods and policies.

In order to render better service, the radioman must apply his training and experience with good equipment. His most important piece of equipment is the radio tube socket tester or analyzer, combined with resistance-measuring and other functions. While this tester is all that is needed for preliminary radio and tube tests in customers' homes, his shop equipment should include an accurate intermediate and broadcast frequency oscillator and a capacitor tester, if these are not included with his analyzer, and such other equipment as the extent of his business may warrant. Many radiomen prefer the portable laboratory unit with combined Analyzer, Ohmmeter, Oscillator, Capacitor Testing, and Tube Checking functions, because a unit of this type is equally useful in rural and suburban homes as well as in the radioman's shop.

It is estimated that radio servicemen sell about 60 per cent of the consumer purchases of tubes, and it appears that their better facilities for observing the operating characteristics of tubes should make the radio servicemen the most logical merchandisers of tubes. In order to meet the competition of price-cutting radio tube outlets which offer and encourage periodical free tube testing, some radiomen rebate their service charge on the purchase of needed replacement tubes amounting to \$5.00 or more. This policy also offers the customer a test of his radio, in addition to a test of his tubes, without cost if he needs replacement tubes, and assures the radioman of a gross profit of \$2.00 for testing the radio and tubes, plus the probability of the customer's future service patronage.

Postal cards provide a good means of direct-mail advertising, if printed with well-worded appeal. For "cold-turkey" canvassing the opening sentence of the printed cards should be aimed at arousing the radio user's inter-

est. This can usually be done by a question, "Is your radio performing satisfactorily?" followed by a reminder of some special broadcast feature in which the public will be interested. The interest-arousing paragraph may be followed by a brief and pointed outline of the radio servicing qualifications, including experience and equipment, of the radio or servicing establishment. The concluding paragraph should make an offer of (1) an inspection, and test of the installation, including the aerial, lightning arrester and ground connections, (2) the removal of dust accumulations from the less accessible recesses of the radio interior, and (3) a test of the radio and tubes for the purpose of detecting any deficiencies which might soon endanger the radio circuits, with resultant expensive repairs, and the offer should stipulate the nominal charge involved with an appeal to the customer to telephone for this inspection and testing service. The telephone number should be stated in this closing sentence. A continuous and steady mailing of such postal cards to radio users will bring profitable calls if properly handled.

When the radioman finds an inoperative radio after responding to a call the customer will usually want an estimate of the cost of the necessary repairs. If the estimate is given without removing the radio, the customer will be tempted to let the radioman leave without the radio with a promise of a later decision. Before the promised decision, however, the customer will usually obtain a lower estimate from a competitive serviceman who will get the job. Instead of hazarding an estimate before removing the radio, the radioman should perform whatever tests he can make of the installation and of the tubes, advise the customer that the various components of the radio cannot be properly tested without taking the radio apart, and that this can best be done in the shop where more complete equipment is available, that the radio will be thoroughly tested in the shop for a nominal charge which should be agreed upon before removing the radio, that the customer will be given an estimate which will not be exceeded, and that the customer can then decide whether to pay the nominal testing charge or have the job completed.

When testing a radio for an estimate, the radioman should test every part which may possibly be defective. When he finds a defective part he should test further to determine the probable cause of the defect. For example, he may find a burned-out resistor, and he should test beyond the resistor to determine whether or not a shorted capacitor overloaded the resistor, causing it to burn out. If such be the case, his estimate must cover the replacement of both parts. Similarly, a burned out line ballast resistor may have been caused by a defective power transformer, or a damaged power transformer

should suggest a test of the filter and output circuits to determine whether or not the transformer was overloaded by some other defective part.

The radioman must also protect himself against possible defects which cannot be detected even by thorough tests. For instance, all defective parts on the replacement of which he has based his estimate may be replaced and then he finds that the radio "plops" into persistent oscillation and requires more time to locate the cause of the new trouble and to correct it. It is for such reasons that estimates should be adequate to cover some of the unforeseen contingencies, and to absorb the losses occasioned by inevitable "call backs" on jobs which go bad a few minutes after the return of the completed jobs. The following "flat-rate" charges, including labor, will generally be found adequate for estimating purposes:

Service Call	\$2.00
Labor, per hour	2.00
Neutrodyne Re-adjustment	3.00
Dial Cable	4.50
Metallized Resistor	4.50
Bypass Capacitor	4.50
Electrolytic Capacitor	6.00
Superheterodyne Re-adjustment	6.00
Single Audio Transformer.....	10.00
Double Audio Transformer.....	12.50
Filter Choke (Field Coil).....	12.50
Power Transformer	15.00
Filter Capacitor Pack	20.00

A printed postal card form, with blank spaces provided for filling in the estimated amount and number of days required for completing the job, is very useful for advising customers of estimates or for confirming telephoned estimates. The card should assure the customer that the estimate would not be exceeded, that the customer will be allowed any savings which can be effected in the course of the repairs, should briefly suggest the radioman's facilities for rendering service, and should remind the customer of the testing charge and ask that he telephone his instructions to the radioman. If the radioman can complete the job at a cost to the customer below the estimate, he should do so in order to enhance the customer's good will.

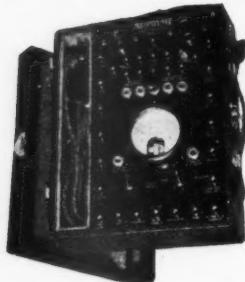
After the job is delivered, a "Thank you" postal card should be mailed, showing an interest in the continued performance of the radio, and asking that the customer recommend the radioman's services to the customer's friends. Such recommendations constitute a form of advertising which cannot be excelled. This card should also suggest the advisability of the customer's using, every few months, the radioman's complete inspection service as outlined at the beginning of this discussion.

NEW MERCHANDISE

The 1933 Line of SUPREME Testing Instruments



Above: Supreme 1932 model AAA1 Diagnometer \$147.50, net. Center: SUPREME Model 90 Set Analyzer with Supreme MULTIMETER \$78.50, net.



Above: Supreme Model 56 Analyzer with "MULTIMETER" \$56.25, net.

PRICED attractively is the new SUPREME INSTRUMENTS line for 1933, fully described in SUPREME'S new catalog which will be sent you on request. A wide and varied SUPREME line is offered for the new season, with many new instruments added. Some of these are here illustrated.



WIRT
Rotary Snap
Switch

Single pole, single throw. Style No. 711. Perfect contact with minimum contact resistance. Easy to mount. Rated at 3 amps., at 125 volts. Underwriters' Approval. Made by WIRT COMPANY, 5221 Greene St., Germantown, Penn.

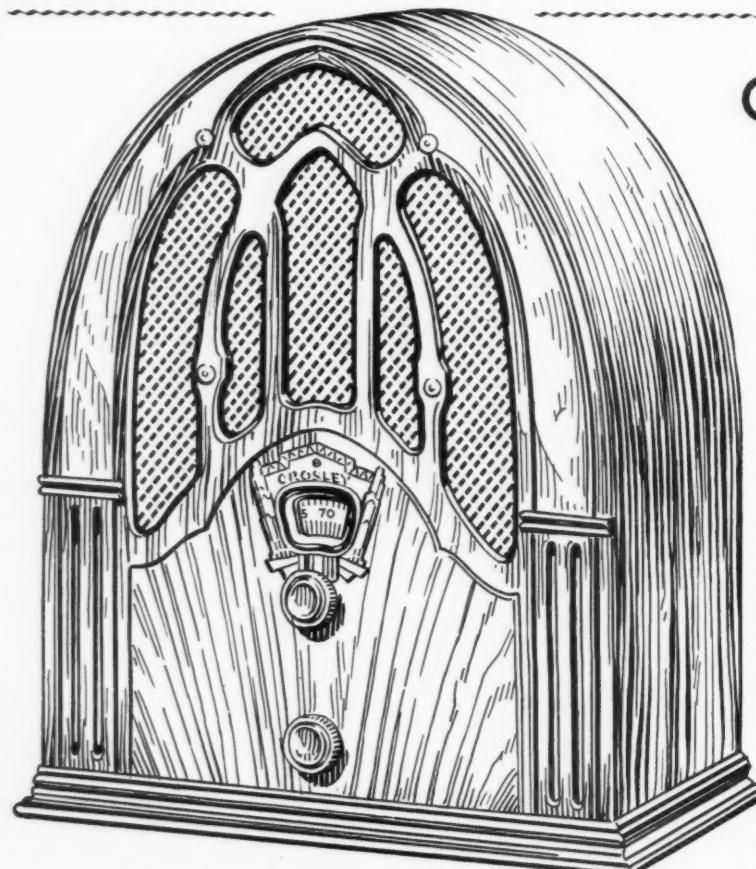


**SPAULDING POSITIVE
CONTACT SOCKET**

Made for 4, 5, 6 and 7 prong tubes. New positive-grip contacts. In standard and midget sizes. Durable in construction and simple to install. Made by Spaulding Fibre Co., Inc., Tonawanda, New York.

UPP GENERATOR

DC-AC Generator for auto radio and sound equipment trucks. Generator driven by car engine. Constant voltage output regardless of engine speed. In 60 or 300 watt models. 6 Volts DC and 110 Volts AC dual output. Made by Whitaker - Upp Co., Kansas City, Mo.



The New Crosley "FIVER"
A Super-Heterodyne that retails for \$19.99.

Crosley 5 Tube Super Hets.

SOME of the new Crosley models are here shown. Each has the new Crosley 5 tube super heterodyne chassis. There are 4 models in the new "FIVER" line: the Gothic, shown at left, retails at \$19.99. The BOOK CASE, at \$34.75, is shown to right, upper illustration. In the lower right corner is shown the new Jewel Case at \$34.75. The new 2½ volt heater type tubes are used in these models.



IN ADDITION to the models illustrated there is a new CROSLEY "FIVER" Lowboy at \$29.99, complete, tax paid. The "SEXTET", 6 tube super-het., table model, at \$34.95, complete. And the "SEXTET" Lowboy at \$39.95.



Introducing

THE RADIO BUYERS' GUIDE OF "RADIO"

THE NATIONAL TRADE MAGAZINE

NOVEMBER, 1932

Who Makes It . . . Where to Buy It . . . What It Costs

PLEASE LET US EXPLAIN THIS NEW GUIDE!

THIS "RADIO BUYERS' GUIDE" is NOT complete. It is merely a SPECIMEN to show you the how and why of it. Next month you will find a more complete GUIDE, and in the January issue of "RADIO" we will give you the finished product. This GUIDE will be repeated every month in all copies of the magazine. It will be revised as new models are announced; it will always be up-to-date. The GUIDE begins with a listing of all sets using the dual-wave principle. This is followed with listings of sets operating on standard broadcast frequencies only. Then follows the listing of automobile radio sets. Then the tube testers . . . condensers, etc. Next month we will add sections devoted to speakers, amplifiers, pub-

lic address equipment, resistors, tubes, radio hardware, equipment for service men, shop tools, sound truck equipment, talking-movie supplies, raw materials, etc.

When you want to buy anything in radio . . . from a complete set to a binding post . . . you merely turn to the GUIDE pages and find the answer to your problems. Let us call your especial attention to the SPECIMEN full page GUIDE listing of REMLER sets. Page to it . . . and there you will find the answer to the radio man's prayer. This SPECIMEN page shows how a hundred or more similar pages will appear, each month in "RADIO".

From this information you find who makes the

product . . . address of manufacturer . . . officers of the company . . . location of branch offices and where warehouse stocks are located . . . listing of jobbers who stock the sets in your city . . . sales policy of the manufacturer . . . export address . . . complete pictorial and descriptive data on all sets made by the manufacturer . . . prices and specifications . . . list of replacement parts . . . net and list prices . . . who stocks the parts in your city. Last, but not least, a SERVICE MAN'S SECTION will show how to service ALL of these sets. Be on the lookout for a monthly 200 page "RADIO" . . . the kind of a magazine that tells you what you want to know.

DUAL-WAVE RECEIVING SETS

ALL AMERICAN

All-American Mohawk Corp.
North Tonawanda, New York.
Model SW-80, \$89.50, list.
7 tubes. Console 14-550 Meters.

ATWATER-KENT

Atwater-Kent Mfg. Co.
2700 Wissahickon Ave., Philadelphia, Penn.
Model 480, \$104.50, list.
9 tubes. Semi-Highboy. 15-550 Meters.

CAPEHART

Capehart Corp., Ft. Wayne, Ind.
3 models, Nos. 11-12 and 14.
\$269.50; \$279.50; \$299.50.
Each has 10 tubes. Highboys. 15-545 Meters.

CENTURY

Century Radio Products Co.
3009 N. Austin Blvd., Chicago, Ill.
Model 5-47SW, prices on request.
5 tubes. Mantel type. 75-550 Meters.

CRESCENT

Crescent Radio Mfg. Co.
1026 - 2nd Ave., Minneapolis, Minn.
Model-Auto radio. \$59.50, list.
6 tubes. AC or Battery types. 80-550 Meters.

CROSLEY

Crosley Radio Corp., Cincinnati, Ohio.
Model 136-1-2-S, \$75.00, list.
Model 136-1-2-PA, \$89.50, list.
Former is chest model, latter is console. Each
has 10 tubes. 17-560 Meters. 9-2-FF.S.W.
Adaptor, chest, \$22.50. 17-200 Meters.

DAVISON HAYNES

Davison-Haynes Corp., 1730 Venice Blvd., Los Angeles, Calif.
5 tube compact super, short-long wave set, \$25.50; 7 tube mantle type, all wave, \$44.50;
7 tube console, all wave, \$59.50.

DUMONT

Dumont Electric Corp.
42 West 17th Street, New York, N. Y.
Model 904. List price, \$49.50.
9 tubes. Chassis only. 200-2000 meters.

ECHOPHONE

Echophone Radio Mfg. Co., Ltd.
104 Lakeview Ave., Waukegan, Ill.
Model 10, \$59.50, 7 tubes, Midget, 17-550
meters. Model 15, \$69.50, 7 tubes, Midget,
17-550 meters. Model 20, \$89.50, 7 tubes,
Lowboy, 17-550 meters. Model 35, \$159.50,
11 tubes, Lowboy, 17-550 meters.

EMERSON

Emerson Radio & Phonograph Corp.
641 - 6th Ave., New York, N. Y.
Model AW-55, \$55.00, Midget, 6 tubes.

FADA

Fada Radio & Electric Corp.
Long Island City, N. Y.
Model 66, \$109.50, 9 tubes, Console.

FEDERATED (Acratone)

Federated Purchaser, Inc., 25 Park Place, New
York, N. Y.
Mod. 91, \$15.25, Midget, 5 tubes, 75-600 met.
Mod. 92, \$16.75, Midget, 5 tubes, 75-600 met.

FERGUSON

Ferguson Radio Corp., 34 E. 12th St., New
York, N. Y. Special 200 to 2000 meter set.
Type BL-61, price on app. 6 tubes. Midget.

GILFILLAN

Gilfillan Bros., Inc., 1815 Venice Blvd., Los
Angeles, Calif. Model 12, \$99.50. Console.
10 tubes. 15-550 meters.

GRIGSBY GRUNOW (Majestic)

Grigsby-Grunow Corp., 5801 Dickens Ave.,
Chicago, Ill. Model 294. \$99.50. Lowboy.
9 tubes. 15-550 meters.

GULBRANSEN

Gulbransen Co., 816 No. Kedzie Ave., Chi-
cago, Ill. Police and broadcast range.
Model 3521. \$39.50. Mantel. 5 tubes. 75-550
3525. \$49.50. Consolette. 5 tubes. 75-550

HAMMARLUND

Hammarlund Mfg. Co., 424 West 33rd St.,
New York, N. Y. Model "PRO", \$162.55.
Table model. 8 tubes, 15-200 meters.
"COMET", \$177.55, Console. 8 tubes, 15-550
meters.

HERBERT H. HORN (TiffanyTone)

Herbert H. Horn, 1627 Hill St., Los Angeles,
Calif. Price on request.
Model 102, Console, 20-550 meters, 7 tubes.
Model 110, Console, 180-550 meters, 7 tubes.

HOWARD

Howard Radio Co., South Haven, Mich.
CONVERTER. \$39.50. Chest type, 4 tubes.
13-200 meters.

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(THE NATIONAL TRADE MAGAZINE)

THE RADIO BUYERS' GUIDE OF "RADIO"

DUAL-WAVE RECEIVING SETS-(Continued)

I. C. A.

Insuline Corp. of America, 23 Park Place, New York, N. Y. "SUPERCONQUEROR", price on request. 8 tubes, 12-550 meters. Also models for 12-2000 meters, 8 tubes, prices on request.

JACKSON BELL

Jackson Bell, Ltd., 1682 W. Washington St., Los Angeles, Cal.
Mod. 26-AV-SB, \$39.50, Midget, 6 tubes, 20-136 meters. Mod. 28-AV-SB, \$57.95, Midget, 8 tubes, 20-550 meters. Mod. 28-AV-SB, \$79.95, same as above, but in console.

J. M. P. (Auto-Dial)

J. M. P. Mfg. Co., Inc., Milwaukee, Wis.
ADAPTOR, S.W. \$12.50. 1 tube, AC or Battery. Steel casing.

KENNEDY

Colin B. Kennedy Corp., 212 W. Ewing Ave., So. Bend, Indiana.
Mod. 164-B, \$89.50, Cons., 10 tu., 15-550 met.
Mod. 266-B, \$109.50, Cons., 10 tu., 15-550 met.
"METROPOLITAN", \$29.50, 4 tubes, Police-broadcast band, AC or DC or UNIV.

MY OWN

My Own Radio, Inc., 1800 Grace St., Chicago, Ill. AUTO RADIO.
Police and broadcast range, \$16.75, 5 tubes.

NATIONAL

National Co., Inc., Malden, Mass.
Model SW-58, 9-2000 meters, \$129.50, 6 tubes.
Model SW-34, 9-2000 meters, \$85.00, 6 tubes.
Model SW-3, 9-2000 meters, \$89.50, 3 tubes.
Model SW-3, DC model, 9-2000 meters, \$55, 3 tubes. (All metal case)

PATTERSON

Patterson Radio Co., 1320 So. Los Angeles St., Los Angeles, Cal.
Mod. 70-AW, \$44.50, Compact, 7 tu. 15-575 m.
Mod. 107-AW, \$54.50, Console, 7 tu. 15-575 m.
Mod. 207-AW, \$64.50, Console, 7 tu. 15-575 m.
Mod. 110-AW, \$69.50, Cons., 10 tu. 15-575 m.
Mod. 210-AW, \$79.50, Cons., 10 tu. 15-575 m.

PHILCO

Philco Radio & Television Corp., Phila., Pa.
43-X, \$100, Console, 9 tubes, 15-545 meters.
43-H, \$79.95, Hi-Boy, 9 tubes, 15-545 meters.
43-B, \$59.95, Baby Grand, 9 tu. 15-545 meters.
4-C Converter, \$39.50, Compact, 15. 8-200 meters, 2 tubes.

PHILMORE

Philmore Mfg. Co., 113 University Place, New York, N. Y.
P-4, \$24.50, Midget, 4 tubes, 75-550 meters
PD-4 \$24.50, Midget, 5 tubes, 75-550 meters
P-7 \$52.50, Midget, 7 tubes, 200-2000 meters
P-6 \$47.50, Midget, 6 tubes, 60-600 meters
P-8 \$59.00, Midget, 7 tubes, 60-600 meters

PIERCE AIRO (DeWald)

Pierce Airo, Inc., 510 6th Ave., New York, N. Y. (Prices on request).
Model BAM, 11 tubes, 15-600 meters.
Model BAH, 7 tubes, 60-600 meters.
Model BLG, 7 tubes, 200-2000 meters.

PILOT

Pilot Radio & Tube Corp., Lawrence, Mass.
Mod. 1010, \$59.50, Midget, 7 tubes, 18-555 m.
Mod. 1011-R, \$64.50, Midget, 7 tu. 18-555 m.
Mod. 8810, \$99.50, Console, 7 tu. 18-555 m.
Mod. 8811-R, \$104.50, Console, 7 tu. 18-555 m.

PLAZA MUSIC (Hamilton Lloyd)

10 West 20th St., New York, N. Y.
Mod. 60, \$49.75, Midget, 6 tu. 200-2000 m.

R. E. L.

Radio Engineering Labs., 100 Wilbur Ave., New York, N. Y.
Model 273 \$33.30, 2 tubes, 20-100 meters
Model 278 \$53.40, 3 tubes, 20-40-80 meters
Model 260-S \$90.40, 4 tubes, 17-87 meters
(Metal cased)

REMLER

Remler Co., Ltd., 2101 Bryant St., San Francisco, Cal.

Mantel Model:

Model 21-3 \$29.90, 4 tubes, 75-550 meters
Model 10-3 \$42.75, 6 tubes, 46-550 meters
Model 15-3 \$59.50, 9 tubes, 46-550 meters

REPUBLIC INDUSTRIES (SkyHawk)

Republic Industries, Ashland, Ohio.
Model MS, \$36.50, Mantel, 5 tu. 75-550 meters

SENTINEL

Sentinel Radio Corp., 9705 Cottage Grove Ave., Chicago, Ill.
Mod. 827, \$107.50, Highboy, 8 tu. 15-2000 m.
Mod. 826, \$92.50, Console, 8 tu. 15-2000 m.
Mod. 614, \$39.90, Midget, 6 tu. 85-550 meters.

MY OWN RADIO MIDGET

GETS POLICE CALLS

Dynamic speaker, R.C.A. licensed tubes. Receiving range, 200 to 1000 miles. 175 to 550 meters, very latest. Send for free circular.

E. WEINERT, Dept. 2,
1643 N. Lawndale Ave., Chicago, Ill.

W. BERT KNIGHT, INC.

Associated Agencies

Factory Representatives

SERVICE . . . QUALITY

1646 West Adams Blvd., Los Angeles, Cal.

SHORTWAVE & TELEVISION LABS (Baird)

70 Brooline St., Boston, Mass.
Mod. 155, \$59.50, Table model, 7 tu. 15-550 m.

SILVER MARSHALL

Silver-Marshall, Inc., 189 West Madison St., Chicago, Ill.

Model Triple-Q-34, Deluxe Console, 11 tubes, 13-550 meters. Model Twin-Q-25-A, Console, 10 tubes, 13-550 meters. Model Q-32, Console, 10 tubes, 13-550 meters. Model V-30, Police and Broadcast, Console, 9 tubes, 120-550 meters.

SIMPLEX

Simplex Radio Co., Sandusky, Ohio.
Model P \$29.95, Midget, 5 tu. 75-550 meters
Model P \$29.95, Midget, 5 tu. 75-550 meters
Model P \$29.95, Midget, 5 tu. 75-550 meters
Model R \$19.95, Midget, 4 tu. 75-550 meters
Model R \$19.95, Midget, 4 tu. 75-550 meters
Model S \$39.95, Midget, 5 tu. 15-2400 meters

STEWART WARNER

Stewart Warner Corp., 1826 Diversey Parkway, Chicago, Ill.

Model:
R-44-A, \$83.95, Console, 8 tu. 15-550 meters
R-46-A, \$96.95, Console, 8 tu. 15-550 meters
R-48-A, \$167.25, Console, 8 tu. 15-550 meters
R-50-A, \$157.50, Console, 10 tu. 13-550 meters
R-51-A, \$194.50, Console, 10 tu. 13-550 meters
R-58-A, \$270.50, Console, 10 tu. 13-550 meters

TRANSFORMER CORP. OF AMERICA (Clarion)

Transformer Corp. of America, Ogden and Keeler Aves., Chicago, Ill.

Mod. 240, \$41.95, Midget, 8 tu. 20-550 meters
Mod. 241, \$41.95, Midget, 8 tu. 200-550 meters

UNITED AMERICAN BOSCH CORP. (American Bosch)

Model:
200-A, Police and B'cast, \$49.95, Chest, 5 tu.
200-B, Police and B'cast, \$49.95, Chest, 5 tu.
260-C, \$132.95, Console, 9 tubes, 15-550 meters
260-R, \$105.95, Console, 9 tubes, 15-550 meters

U. S. RADIO & TELEVISION CORP. (Apex)

Marion, Ind. (3301 South Adams Street).
Mod. 5-A, Table, \$36.50, 5 tu. 75-550 meters
Mod. 7-D, Table, \$52.50, 7 tu. 15-550 meters

WELLS-GARDNER-

GULBRANSEN (Wells-Gardner)

The Gulbransen Co., 816 No. Kedzie Ave., Chicago, Ill.

Mod. 2522, \$34.50, Mantel 5 tu. 75-550 meters
Mod. 2525, \$39.50, Cons., 5 tu. 75-550 meters

WILCOX-GAY

Wilcox-Gay Corp., Charlotte, Michigan.
Model 2-T-5-30. Table. \$33.50. 5 tubes, 75-550 meters.

ZENITH & ZENETTE

Zenith Radio Corp., 3620 Iron St., Chicago, Ill.
Mod. 250, \$73.00, Table 7 tu. 15-560 meters
Mod. 260, \$92.00, Lowboy 7 tu. 15-560 meters

THE RADIO BUYERS' GUIDE OF "RADIO" (THE NATIONAL TRADE MAGAZINE)

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Standard Broadcast Frequency Receivers Only

ALL AMERICAN MOHAWK CORP. (Lyric)

North Tonawanda, New York.
Model SA-65—Mantel, \$45.00, 6 tubes.
Model SA-66—LoBoy, \$53.50, 6 tubes.
Model SA-90—LoBoy, \$74.50, 9 tubes.
Model SA-130—Console, \$149.50, 13 tubes.
Model B-80—LoBoy, \$97.50, 8 tubes.
Model DC-65—\$47.50, 6 tubes.
Model DC-65—\$49.50, 6 tubes.

ANSLEY RADIO LABS (Ansley Universal)

147 West 23rd St., New York, N. Y.
Model U-8—Portable, \$59.50, 8 tubes.
Model U-9—Portable, \$79.50, 8 tubes.

ATWATER-KENT MFG. CO. (Atwater-Kent)

4700 Wissahickon Ave., Philadelphia, Pa.
Model 812—HiBoy, \$139.50, 12 tubes.
Model 612—Semi-HiBoy, \$116.50, 12 tubes.
Model 260—Semi-HiBoy, \$99.75, 10 tubes.
Model 469—LoBoy, \$89.75, 9 tubes.
Model 188—LoBoy, \$73.75, 8 tubes.
Model 558—Compact, \$63.90, 8 tubes.
Model 627—Compact, \$53.90, 7 tubes.
Model 558-D—Compact, \$68.90, 8 tubes.
Model 469-D—LoBoy, \$89.75, 8 tubes.
Model 558-Q—Compact, \$68.90, 9 tubes.
Model 469-Q—LoBoy, \$89.75, 9 tubes.
Model 91—AutoRadio, \$73.25, 9 tubes.

AUDIOILA RADIO CO. (Audiola)

430 So. Green St., Chicago, Ill.
Model 811—Midget, \$49.50, 8 tubes.
Model 843—LoBoy, \$56.50, 8 tubes.
Model 868—HiBoy, \$64.50, 8 tubes.
Model 1011—Midget, \$56.50, 10 tubes.
Model 1050—LoBoy, \$66.50, 10 tubes.
Model 1068-N—HiBoy, \$77.50, 10 tubes.
Model 11300DN—HiBoy, \$109.50, 10 tubes.

AUTOMATIC RADIO MFG. CO., INC. (Automatic)

112 Canal St., Boston, Mass.
Model P45—Midget, \$44.50, 6 tubes.
Model V45—Midget, \$39.50, 6 tubes.
Model P35—Midget, \$34.50, 5 tubes.
Model P25—Midget, \$29.50, 4 tubes.

BELMONT RADIO CORP. (Freshman-Belmont)

520 North Michigan Ave., Chicago, Ill.
Model 41-A—Midget, \$19.50, 4 tubes.
Model 51-C—Midget, \$27.95, 4 tubes.
Model 71-A—Midget, \$39.95, 7 tubes.
Model 100-A—Console, \$59.95, 10 tubes.
Model 45—Midget, \$24.50, 4 tubes.
Model 70-A—AutoRadio, \$69.50, 5 tubes.

CAPEHART CORP. (Capehart)

Fort Wayne, Indiana.
Model 1—Phone-Combination, \$169.50, 9 tubes.
Models 11-12-14, short and best phone combination.
Prices: \$269.50; \$279.50; \$299.50. All HiBoys. All 10 tubes.
Model 200—Phone-Combina'n, \$495, HiBoy, 11 tu.
Model 300—Phone-Combina'n, \$675, HiBoy, 11 tu.
Model 400A—Phone-Combina'n, \$895, HiBoy, 14 tu.
Model 402A—Phone-Combina'n, \$875, HiBoy, 14 tu.

CAWOOD

Cawood Radio Laboratory,
835 N. Ogden Drive, Los Angeles, Calif.
Midget, 4 tubes, \$18.75, list; 5 tubes, \$24.75, list.
TRF. Tradename "SUPERTONE". Also makers
of low priced "JALLOPIE". Price on request.

CENTURY RADIO PROD. CO.

3009 No. Austin Blvd., Chicago, Ill.
Model 4-47—Mantel, prices on application, 4 tubes.
Model 5-47—Mantel, prices on application, 5 tubes.
Model 4-78—Mantel, prices on application, 4 tubes.
Model 4-47-C—Clock, prices on application, 4 tubes.
Model 6-55—Mantel, prices on application, 6 tubes.
Model 5-38—Mantel, prices on application, 5 tubes.
Model 7-38—AutoRadio, prices on application, 7 tu.

TWO SETS FOR THE PRICE OF ONE

MISSION BELL'S new combination auto-home set will be a steady seller during the holiday season . . . all the year 'round, too.

Six tube super-heterodyne as a house set; five tube super as an automobile set. Comes in beautiful walnut cabinet; 14 in. long, 7 deep and 8½ high.

\$49.50 Regular
Jobbers'
Discount

Not "just something new to sell," but a product designed to meet a long-felt need. Besides use in home and auto, also becomes portable model for beach, mountains and seashore.

Specifications include new dual-field dynamic speaker; unusual distance and selectivity on three foot aerial; all standard parts and all new-type tubes. Set operates simply. Just carry cabinet from house to auto and plug into socket same as plugging into light current. Cable and plug for B batteries or eliminator furnished at slight additional cost.

Mission Bell Radio Mfg. Co., Inc.
1455 Venice Blvd. Los Angeles

RADIETTE

Complete line of radios . . .
midgets, table models, consoles
and auto sets.

Keller-Fuller Mfg. Co., Ltd.
4957 Sunset Blvd. Los Angeles

JACKSON-BELL

PROFIT IN PETER PAN RADIOS



Genuine Peter Pan, list \$31.95

PACIFIC COAST dealers made approximately a quarter of a million dollars profit selling over 20,000 Peter Pans in the past year. DID YOU GET YOUR SHARE? More than 100 a day will be sold in the Los Angeles area alone during the holiday season. WILL YOU GET YOUR SHARE?

Entire J-B line ranges from a list of \$31.95 to \$98.50 . . . most outstanding being the popular GENUINE Peter Pan midget at \$31.95; the chest model at \$34.95 and the new 12 tube, six legged console model with automatic volume control (silent between stations) at \$59.95. This is an outstanding value.

Jackson-Bell products are thorough in workmanship, of standardized value and represent fair profits to manufacturer, jobber and retailer.

JACKSON-BELL RADIO COMPANY
6500 McKinley Avenue LOS ANGELES

COLUMBIA PHONOGRAPH CO., INC. (Columbia)

55 Fifth Ave., New York, N. Y.
Model C-81—Compact, \$54.50, 8 tubes.
Model C-83—LoBoy, \$66.00, 8 tubes.
Model C-84—HiBoy, \$88.00, 8 tubes.
Model C-85—Phono-Comb. Console, \$108, 8 tubes.
Model C-103—LoBoy, \$49.50, 7 tubes.
Model C-93—HiBoy, \$89.50, 10 tubes.
Model C-95—Console, \$139.00, 10 tubes.

CORONADO MFG. COMPANY (Coronado)

2233 University Ave., St. Paul, Minn.
Model Treasure Chest, Midget, \$36.00, 5 tubes.
Model "Three Star", Midget, \$36.00, 5 tubes.

CRESCENT RADIO MFG. COMPANY (Crescent)

1026 Second Ave., Minneapolis, Minn.
Model 32-70—LoBoy, \$88.00, 7 tubes.
Model M-32—Midget, \$73.00, 7 tubes.
Model 2-70—LoBoy, \$79.50, 7 tubes.
Model M-2—Midget, \$59.50, 7 tubes.

CROSLEY RADIO CORP. (Crosley)

3401 Colerain, Cincinnati, Ohio.
Model 141-2-T—Chest, \$29.95, 5 tubes.
Model 141-2-GA—Chest, \$34.50, 5 tubes.
Model "Fiver"—Mantel, \$19.95, 5 tu. Super-Het.
Model "Sextet"—Mantel, \$34.95, 6 tu. Super-Het.
Model "Book Case"—Library book case style, \$34.75, 5 tubes, Super-Het.
Model "Jewel Case"—Chest, \$34.75, 5 tubes, Super-Het.
Model 129-2-BA—Midget, \$39.95, 6 tubes.
Model 129-1-2-K—Chest, \$49.95, 6 tubes.
Model 129-2-L—Console, \$52.00, 6 tubes.
Model 146-2-E—Midget, \$55.00, 9 tubes.
Model 146-2-Q—Console, \$65.00, 9 tubes.
Model 146-1-2-PA—Console, \$75.00, 9 tubes.
Model 132-1-2-MB—Console, \$99.50, 11 tubes.
Model 131-1-2-W—Console, \$119.50, 11 tubes.
Model 96—AutoRadio, \$39.50, 6 tubes.
Model 128-2-EA—Midget, \$59.95, 8 tubes.
Model 128-1-LC—Console, \$73.50, 8 tubes.

CUSTOM BUILT

Custom Built Radio Mfg. Co.,
4955 Hollywood Blvd., Hollywood, Calif.
"CROWN" Super T-R-F's. 4 tubes, \$16.95; 5 tubes, \$27.85; 6 tubes, \$34.50. All Midgets. Also a 6 tube TRF Console, \$41.25. All prices are list.

DUMONT ELECTRIC CORP. (Dumont)

42 West 17th St., New York, N. Y.
Model 600—Midget, Phono-Comb., \$49.50, 6 tubes.
Model 400—Midget, \$29.50, 6 tubes.
Model 503—Midget, \$39.50, 6 tubes.
Model 904—Chassis, best and long waves, range: 200-2000, \$49.50, 9 tubes.

ECHOPHONE RADIO MFG. COMPANY, LTD. (Echophone)

104 Lakeview Ave., Waukegan, Ill.

Model 5—Midget, \$39.75, 6 tubes.
Model 4—Midget, \$24.75, 4 tubes.
Model 44—Midget, \$24.75, 4 tubes.
Model 12—Midget, \$32.75, 5 tubes.
Model 14—\$46.50, 6 tubes.
Model 16—\$59.50, 8 tubes.
Model 17—\$69.50, 8 tubes.
Model 18—LoBoy, \$89.50, 8 tubes.

ELECTRIC AUTO-LITE COMPANY (Auto-Lite)

Toledo, Ohio.
Model 3722—AutoRadio, \$89.50, 7 tubes.

EL-REY RADIO MFG. CO. (El Rey)

8406 So. Broadway, Los Angeles, Calif.
4 Tube TRF, \$17.95, list.
6 Tube Super., \$29.95, list.

NOVEMBER, 1932

THE RADIO BUYERS' GUIDE OF "RADIO" (THE NATIONAL TRADE MAGAZINE)

Standard Broadcast Frequency Receivers—(Cont'd)

**EMERSON RADIO PHONO.
CORP. (Emerson)**

641 6th Ave., New York, N. Y.
 Model L-556—Midget, \$29.50, 5 tubes.
 Model L-557—Compact, \$27.50, 5 tubes.
 Model L-559—Chest, \$34.50, 5 tubes.
 Model L-456—Midget, \$29.50, 4 tubes.
 Model L-457—Compact, \$27.50, 4 tubes.
 Model L-459—Chest, \$34.50, 4 tubes.
 Model L-B-458-Baronet—Compact, 4 tubes.
 Model L-B-460-Baronet—Midget, 4 tubes.
 (Prices of latter two on application.)

**FADA RADIO & ELECTRIC
CORP. (Fada)**

Long Island City, New York.
 Model 73—Table, \$52.00, 7 tubes.
 Model 85—LoBoy, \$62.50, 7 tubes.
 Model 74—Console, \$83.50, 9 tubes.
 Model 76—LoBoy, \$94.00, 9 tubes.
 Model 87—LoBoy, \$73.00, 9 tubes.
 Model 78—LoBoy, \$131.00, 11 tubes.
 Model 79—HiBoy, \$142.00, 11 tubes.
 Model 83—LoBoy, price on request, 9 tubes.
 Model 88—LoBoy, price on request, 9 tubes.
 Model 89—HiBoy, price on request, 9 tubes.
 Model 93—Table Best and Long Wave, price on request, 7 tubes.
 Model 95—LoBoy, Best and Long Wave, price on request, 7 tubes.
 Model 97—LoBoy, \$73.00, 9 tubes.
 Model 55—Table, \$39.50, 5 tubes.

**FEDERATED PURCHASER
(Acratone)**

25 Park Place, New York, N. Y.
 Midgets, from \$14.75 to \$16.25, 5 tubes.
 Midgets, with best and long waves, 200-2000 meters, from \$18.50 to \$21.50. Phono-Radio Combinations from \$33.50 to \$41.00. Also special 25 cycle models.

FERGUSON RADIO CORP.

34 East 12th St., New York, N. Y.
 Model CB81—Midget, 8 tubes.
 Model F58C—Midget, 5 tubes.
 Model F5DC—Midget, 5 tubes.
 Model F4AC—Midget, 4 tubes.
 Model F4DC—Midget, 4 tubes.
 Model S6—Midget, 6 tubes.
 Model BL-61—Best and Long Wave, Midget, 6 tubes, prices of all above on application.

FLEETWOOD RADIO CORP.

Fleetwood, Pennsylvania.
 Model GF110—Desk, \$169.50, 10 tubes.
 Model GF106—AutoRadio, 6 tubes, price on request.
 Model GF111—Desk, \$189.50, 11 tubes.
 Model GF114—\$197.50, Console, 14 tubes.

**FRANKLIN RADIO CORP.
(Franklin)**

333 Linden Ave., Dayton, Ohio.
 Model 100—AutoRadio, 6 tubes.
 Model 101—Midget, 4 tubes.
 Model 102—Midget, 5 tubes.
 Model 103—Midget, Best and Long Waves, 6 tubes, 200-2000 meters.
 Model 104—Midget, Best and Long Waves, 5 tubes, 200-2000 meters.
 Model 105—Midget, 4 tubes.
 Model 106—Midget, 5 tubes.
 Model 107—Midget, Best and Long Waves, 6 tubes, 200-2000 meters.
 Model 108—Midget, Best and Long Waves, 5 tubes, 200-2000 meters.
 (Prices of all above on application.)

**FREED TELEVISION & RADIO
CORP. (Freed-Eisemann)**

22-17 41st Ave., Long Island City, N. Y.
 Model 51—Midget, 5 tubes.
 Model 52—Chest, 5 tubes.
 Model 53—Table, 5 tubes.
 Model 54—Table, 5 tubes.
 Model 56—Midget, 5 tubes.
 Model 58—Midget, 5 tubes.
 Model 59—Chest, 5 tubes.
 Model 63—Chassis, 7 tubes.
 Model 72—Chassis, 7 tubes.
 Model 90—Chassis, 9 tubes.
 Model 120—Chassis, 11 tubes.
 (All prices on application.)

**LONG LIFE . . .
. . . TROUBLE FREE**



CROWN

The King of Radios

Not a Cheap Radio
But a Good Trouble-Free
Low Priced Receiver
4, 5, and 6 tube models

Custom built to meet your local conditions

Custom Built Radio Mfg. Co.
4955 Hollywood Blvd. Hollywood, Calif.

WESTONE

4 and 5 tube models

PRICED to enable you to profitably meet mail order and chain store prices.

Using all new tubes, including mercury vapor rectifier.

Westone Radio Mfg. Co.
2513 So. La Salle Ave. Los Angeles

W. H. COOKE

AND

E. P. DEMAREST

*Factory
Representatives*

3440 So. Hill Street
LOS ANGELES

GENERAL ELECTRIC CO. (G.E.)

Bridgeport, Conn.

Model J107—LoBoy, \$104.50, 10 tubes.
 Model J125—LoBoy, \$147.50, 12 tubes.
 Model J105—LoBoy, \$93.50, 10 tubes.
 Model J86—LoBoy, \$72.95, 8 tubes.
 Model J100—Table, \$73.75, 10 tubes.
 Model J82—Table, \$59.50, 8 tubes.
 Model J85—LoBoy, \$79.50, 8 tubes.
 Model J75—LoBoy, \$66.50, 7 tubes.
 Model J80—Table, \$59.95, 7 tubes.
 Model J70—Table, \$48.75, 7 tubes.
 Model H91—Grfr. Clock, \$285.00, 9 tubes.
 Model K82—Grfr. Clock, \$179.00, 9 tubes.
 Model J109—HiBoy, Phono-Comb., \$269.50, 10 tu.
 Model J88—LoBoy, Phono-Comb., \$124.75, 8 tubes.
 Model H72—LoBoy, Phono-Comb., \$345.00, 10 tu.
 Model S42-B—LoBoy, \$99.50, 8 tubes.
 Model A-81—Portable, \$81.50, 8 tubes.
 Model A-90—AutoRadio, \$76.75, 9 tubes.

GILFILLAN BROS. INC. (Gilfillan)

1818 Venice Blvd., Los Angeles, Calif.

Model 5—Midget, \$31.95, 5 tubes.
 Model 7M—Midget, \$47.50, 6 tubes.
 Model 7C—Console, \$59.50, 7 tubes.

GRAYBAR ELEC. CO. (Graybar)

Graybar Bldg., 420 Lexington Ave., N. Y. C.
 Model GT7—Table, \$46.75, 7 tubes.
 Model GC13—Console, \$66.50, 7 tubes.
 Model GT8—Table, \$59.95, 8 tubes.
 Model GC14—Console, \$79.50, 8 tubes.
 Model 9—Consolette, price on request, 9 tubes.

GRIGSBY-GRUNOW (Majestic)

5801 Dickens Ave., Chicago, Ill.

Model 311—Table, \$44.50, 7 tubes.
 Model 321—Table, \$62.50, 9 tubes.
 Model 314—LoBoy, \$69.50, 7 tubes.
 Model 293—Console, \$73.00, 9 tubes.
 Model 307—LoBoy, \$89.50, 10 tubes.
 Model 304—Console, \$99.50, 10 tubes.
 Model 324—Console, \$149.50, 11 tubes.

GULBRANSEN CO. (Gulbransen)

816 North Kedzie Ave., Chicago, Ill.

Model 3521—Mantel, police and best, \$89.50, 5 tubes.
 Model 3525—Consolette, police & best, \$49.50, 5 tu.
 Model 8726—LoBoy, \$69.50, 7 tubes.
 Model 3225—HiBoy, \$99.50, 12 tubes.
 Model 3226—Console, \$129.50, 11 tubes.
 Model 3925—Console, \$74.50, 9 tubes.
 Model 3622—AutoRadio, \$57.50, 6 tubes.
 Model 3722—AutoRadio, \$62.50, 7 tubes.

**HALSON RADIO MFG. CORP.
(Halson, Viking, Fanahl-LaSalle)**

45-51 Listenard St., New York, N. Y.

Model 414S—Midget, \$9.75, 4 tubes.
 Model 414—Midget, \$10.50, 4 tubes.
 Model 510—Midget, \$13.50, 5 tubes.
 Model 615—Midget, \$11.50, 6 tubes.
 Model 200—Chest, \$13.00, 4 tubes.

**HERBERT H. HORN, INC.
(Tiffanytone)**

1627 Hill St., Los Angeles, Calif.

Models do not show prices. Prices on request.
 Model 25—Midget, 4 tubes.
 Model 30—Midget, 5 tubes.
 Model 29—Midget, 4 tubes.
 LoBoy Model, 6 tubes.
 Model 32—Midget, 5 tubes.
 Model 110—Console, 10 tubes.

HOWARD RADIO CO. (Howard)

South Haven, Michigan.

Model K—Console, \$89.50, 10 tubes.
 Model L—HiBoy, \$109.50, 11 tubes.
 Model 500—Console, \$365.00, 15 tubes.
 Model 501—Console, \$395.00, 15 tubes.
 Model M—Console, \$139.50, 13 tubes.
 Model 33—AutoRadio, prices on request, 8 tubes.

NOVEMBER, 1932

Standard Broadcast Frequency Receivers—(Cont'd)

INSULINE CORP. (I.C.A.)

23 Park Place, New York City.

Model SuperSix—6 tubes.
Model SuperSeven—7 tubes.
Model SuperSix—Best. & Long Waves, 6 tubes, 200-2000 meters.
Model SuperSix—Best. & Long Waves, 6 tubes, 200-2000 meters.
Model SuperSeven—Best. & Long Waves, 7 tubes, 200-2000 meters.
Envoyette—Midget, 5 tubes.
(All prices on application.)
Universal Companion—Portable, 7 tubes.

INTERNATIONAL RADIO CORP. (International)

Ann Arbor, Michigan.

Model PW—Midget, \$25.00, 4 tubes.
Model PM—Midget, \$25.00, 4 tubes.
Model PB—Midget, \$25.00, 4 tubes.
Model PD—Midget, \$35.00, 4 tubes.
All Purpose Model—\$25.00, 4 tubes.

JACKSON BELL MFG. CO. LTD. (Jackson-Bell)

650 McKinley Ave., Los Angeles, Calif.

Peter Pan 5 tube super, list \$31.95; Pandora, chest type, 5 tube super, list \$34.95; 5 tube super, auto, \$39.95 list; and many other models including new 12 tube, console, six legged; list \$59.95. (incl. auto. volume control).

JACKSON RADIO & TELEV. CO.

8440 So. Chicago Ave., Chicago, Ill.

Model SF547—Midget, \$23.50, 5 tubes.
Model LK447—Midget, \$19.75, 4 tubes.

KELLER-FULLER

Keller-Fuller Mfg. Co., Ltd.,
4957 Sunset Blvd., Los Angeles, Calif.
4 tube TRF, \$14.95, list; 5 tube super het., \$21.95,
list; 9 tube super het., \$49.95, list; 12 tube console,
super het., \$59.50, list.

COLIN B. KENNEDY CORP. (Kennedy)

212 West Ewing, South Bend, Ind.

Model 366B—HiBoy, 9 tubes.
Model 62D—HiBoy, 10 tubes.
Model 62D—LoBoy, 10 tubes.
(Prices on application).

KOLSTER RADIO, INC. (Kolster)

200 Mt. Pleasant Ave., Newark, N. J.

Models K110 & K112—Mantel, \$61.00, 8 tubes.
Model K14—Mantel, \$71.25, 9 tubes.
Models K120, K122—Consoles, \$76.50, 8 tubes.
Model K113—Mantel, \$66.25, 8 tubes.
Model K123—Console, \$81.75, 8 tubes.
Models K130, K132—Consoles, \$102.00, 9 tubes.
Model K133—Console, \$112.25, 10 tubes.
Models K140, K142—DeLuxe Consoles, \$148, 10 tu.
Model K133A—DeLuxe Console, \$139.75, 10 tubes.

LANG RADIO COMPANY (Lang)

767 East 132nd St., New York City.

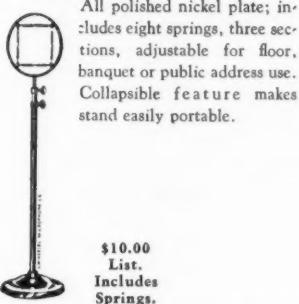
Model AA5—Midget, 5 tubes.
Model DC6—Midget, 6 tubes.
Model AA7—Midget, 7 tubes.
Model DB—Midget, 7 tubes.
(Prices on application.)

MISSION BELL

Mission Bell Radio Mfg. Co., Inc.,
1455 Venice Blvd., Los Angeles, Calif.
4 tube super het., \$17.50.
5 tube super het., \$22.45.

MANHART
Manhart Radio Co.,
6219 So. Hoover St., Los Angeles, Calif.
Tradename "ROAMER".
Super-Het. 6 tube Consolette, \$32.50, list.
8 tube Super-Het. Console, \$49.50, list.

NEW UNIVERSAL MFGRS. TYPE ADJUSTABLE FLOOR STAND LIST PRICE \$10.00



\$10.00
List.
Includes
Springs.

MODEL X DESK MOUNT \$3.50

Highly polished nickel! plate; molded rubber base cushion; includes 8 springs; 5 inches diameter; suitable for single button and light weight button microphones.

At all radio dealers and jobbers, or sent direct on receipt of purchase price.

Desk-Type
Mounting
\$3.50 List.
Includes
Springs.

Universal Microphone Co., Ltd.
INGLEWOOD, CALIF.

EL REY

Builders of quality car sets, mantle-type sets and consoles.

El Rey Radio Corporation
8406 So. Bdwy. Los Angeles

NOTHING ELSE BUT—
REWINDING
OF
BURN T-OUT
TRANSFORMERS
SPEAKER FIELDS
& CHOKE COILS

Average cost only \$3.50

Materials and Workmanship
Guaranteed

MAIL ORDERS SOLICITED

— 48 HOUR SERVICE —

HOYT MFG. CO.

286 Sixth St., San Francisco

MINERVA RADIO CO. (Minerva)

10 No. Clark St., Chicago, Ill.
Model E—Mantel, \$19.50, 4 tubes.
Model M—Mantel, \$37.50, 6 tubes.
Model AutoRadio—\$35.00, 4 tubes.

MY OWN RADIO, INC. (My Own)

1800 Grace St., Chicago, Ill.

Model AutoRadio—\$16.95, 5 tubes.

NATIONAL CO., INC. (National)

Malden, Mass.

Model MB-32—Tuner Chassis, \$85.00, 4 tubes.

Model VSA—Amplifier & pwr. supply, \$68.50, 4 tu.

NORTHWEST SPECIALTY SERVICE, LTD. (Walton)

Waukegan, Ill.

Model 5L—Midget, 5 tubes.
Model 1H—Midget, 6 tubes.
Model A16—Console, 10 tubes.
Model M—AutoRadio, 6 tubes.
Model D—Midget, 5 tubes.
(Prices on application.)

OZARKA, INC. (Ozarka) (Viking)

1257 Fullerton Ave., Chicago, Ill.

Model V6—Table, \$65.00, 6 tubes.
Model V8—Console, \$100.00, 8 tubes.
Model V10—Console, \$125.00, 10 tubes.
Model V16—Console, \$200.00, 11 tubes.

PARAMOUNT

Los Angeles Radio Mfg. Co.,
944 So. Broadway, Los Angeles, Calif.

Auto sets: 4 tube, TRF, list \$18.95; 5 tube, TRF, list \$29.95; 7 tube, super, all electric, list \$79.95. All-wave set, 11 tube, super, list \$69.50. Midgets: 4 tube "Kewpie" TRF, list \$16.95; 4 tube "Hollywood" TRF, \$19.95; 4 tube Paramount PeeWee TRF, list \$24.95; 4 tube Paramount de luxe TRF, list \$29.95; 5 tube Paramount TRF, list \$34.50; 7 tube super, list \$44.50; 10 tube super \$59.50; consoles slightly higher.

PATTERSON RADIO CO. (Patterson and Private Label Radios)

1320 Los Angeles St., Los Angeles, Cal.

Model 70—Compact, \$34.50, 7 tubes.
Model 107—Console, \$44.50, 7 tubes.
Model 207—Console, \$54.50, 7 tubes.

PHILCO RADIO & TELEVISION CORP. (Philco)

Philadelphia, Penn.

Model 80-B—Midget, \$18.75, 4 tubes.
Model 52-L—Console, \$37.50, 4 tubes.
Model 24L—Console, Phono-Comb., \$75, 7 tubes.
Model 15-X—Console, \$150.00, 12 tubes.
Model 91-X—Console, \$100.00, 10 tubes.
Model 91-D—HiBoy, \$89.75, 10 tubes.
Model 91-L—LoBoy, \$89.95, 10 tubes.
Model 91-B—BabyGrand, \$69.50, 10 tubes.
Model 71-D—HiBoy, \$79.95, 8 tubes.
Model 71-H—HiBoy, \$69.95, 8 tubes.
Model 71-L—LoBoy, \$59.95, 8 tubes.
Model 71-B—Baby Grand, \$49.50, 8 tubes.
Model 52-C—Compact, \$39.50, 5 tubes.
Model 52-B—Baby Grand, \$36.50, 5 tubes.
Model 23-X—Console, Phono-Comb., \$195.00, 10 tu.
Model 22-L—LoBoy, \$129.50, 8 tubes.
Model 36-D—HiBoy, \$89.50, 7 tubes.
Model 36-L—LoBoy, \$69.95, 7 tubes.
Model 36-B—Baby Grand, \$59.95, 7 tubes.
Model 47-X—Console, \$100.00, 9 tubes.
Model 47-D—HiBoy, \$89.95, 9 tubes.
Model 47-B—Baby Grand, \$59.95, 9 tubes.
(Prices higher in West.)

PIERCE-AIRO, INC. (De-Wald)

510 6th Ave., New York City.

Model BAC—4 tubes, Midget.
Model BAG—6 tubes, Midget.
Model KAD—4 tubes, Midget.
Model KAF—6 tubes, Midget.
Model 50—5 tubes, Table.
Model 533-A—Midget, 5 tubes.
(Prices on application.)

Emerson "RADIO CHEST"



Emerson
Radio and
Television

**Outstanding
VALUE**
among the new
1933 Radios!

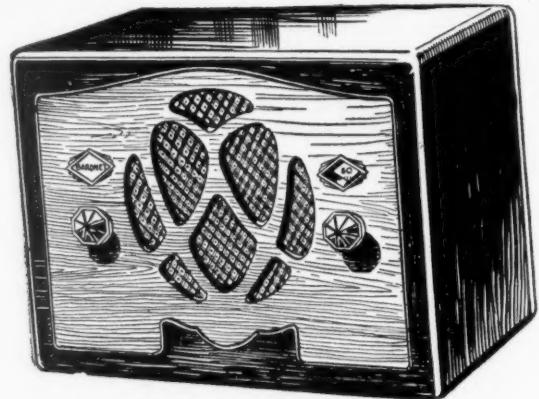


Complete with
Cunningham Tubes

\$34.50

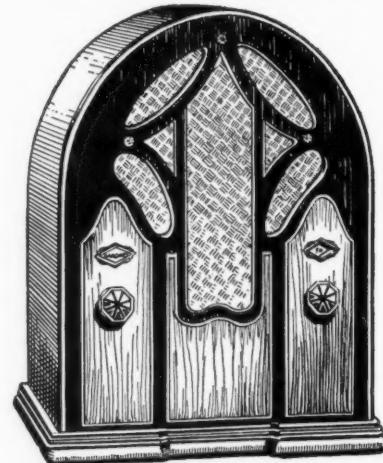
Including Tax

Starting a new vogue in radio furniture, this "Chest" is wrought of selected woods, with hand-carving on top and front, overlaid with four-piece matched walnut veneers. Hinged top acts as sounding board, adding to its natural volume and resonance.



EMERSON MODEL LB-458

\$23.50 Uses 1 No. 58, 1 No. 57, 1 No. 347
LIST and 1 No. 380. Single dial. Dynamic
speaker. 12 $\frac{1}{4}$ "x9 $\frac{1}{2}$ "x7 $\frac{1}{2}$ ".



EMERSON MODEL LB-460—Gothic Design
\$24.50 Uses 1 No. 58, 1 No. 57, 1 No. 347,
LIST and 1 No. 380. Size 15"x13"x8".

Northern California Distributors for

CUNNINGHAM TUBES
EVEREADY BATTERIES
PRECEPTOR TUBE TESTER
STAR RITE ELECTRICAL APPLIANCES
EMERSON AUTOMOBILE B. POWERS
NATIONAL Products—PILOT Products

... And All Nationally Known Products and Short Wave Equipment.

◆ MOST COMPLETE CATALOG EVER PUBLISHED ON THE PACIFIC COAST
DEALERS AND SERVICE MEN SEND FOR YOUR COPY TODAY! ◆

ELECTRIC SUPPLY COMPANY
329 Thirteenth Street EDD N. WATKINS
Oakland, California

62
32

RADIO FOR NOVEMBER

Standard Broadcast Frequency Receivers—(Cont'd)

PILOT RADIO & TUBE CORP.

(Pilot)

Lawrence, Mass.
Model Corsair, 9255—Chest, \$39.50, 5 tubes.
Model Corsair, 9257R—Chest, \$44.50, 5 tubes.
Model Armada, 8643—Console, \$49.50, 5 tubes.
Model Armada, 8645R—Console, \$54.50, 5 tubes.
Model 20th Century, 3679—Midget, \$44.50, 7 tubes.
Model 20th Century, 7641R—Midget, \$49.50, 7 tubes.
Model Golden Arrow, 8239—Console, \$67.50, 7 tubes.
Model Golden Arrow, 8241R—Console, \$72.50, 7 tubes.

PIONEER PRODUCTS (Pioneer)

Plano, Ill.

Model S33-M—Midget, \$84.25, 7 tubes, batt. model.
Model S33-C—Console, \$98.75, 7 tubes, batt. model.
Model T33-M—Midget, \$75.35, 6 tubes, batt. model.
Model T33-C—Console, \$88.60, 6 tubes, batt. model.
(All with batteries. Tax to be added.)

PLAZA MUSIC COMPANY (Hamilton-Lloyd)

10 West 20th St., New York, N. Y.
Model 711—Midget, \$32.75, 5 tubes.
Model 711—Midget, \$30.50, 5 tubes.
Model Pal-61—Portable, \$32.50, 5 tubes.
Model Pal-59—Portable, \$30.25, 5 tubes.
Model 16—Midget, \$41.00, 7 tubes.
Model 90—Midget, 6 tubes.
Model 52—Console, \$49.75, 6 tubes.
Model 134—Console, Phono-Comb., data on request.

RADIART CORP. (Radiart)

13229 Shaw Ave., Cleveland, Ohio.
Model 41A—Midget, \$22.50, 4 tubes.
Model 52A—Midget, \$32.50, 5 tubes.

RADIO CHASSIS, INC.

110 West 18th St., New York, N. Y.
Model SUA36—Midget, \$37.50, 6 tubes.
Model FVA35—Midget, \$31.00, 5 tubes.
Model AC25—Midget, \$27.50, 4 tubes.
Model FVD36—Midget, \$34.50, 6 tubes.
Model DC25—Midget, \$29.50, 5 tubes.
Model CH38—Chassis price on request, 8 tubes.
Model TR36—Chest, \$39.50, 6 tubes.
Model TR35—Chest, \$38.50, 5 tubes.

R.C.A. VICTOR CO., INC. (RCA-Victor)

Camden, N. J.

Model R4—Midget, \$48.75, 7 tubes.
Model R71—Table, \$59.50, 8 tubes.
Model R72—Console, \$72.95, 8 tubes.
Model R74—Table, \$73.75, 10 tubes.
Model R76—Console, \$93.50, 10 tubes.
Model R77—Console, \$104.50, 10 tubes.
Model R78—Console, \$149.75, 12 tubes.
Model RAE84—Console, automatic phono-comb., \$310.00, 12 tubes.
Model R81—Console, \$178.00, 10 tubes.
Model R6—Console, \$66.50, 7 tubes.
Model R71B—Table, \$62.75, 8 tubes.
Model M30—AutoRadio, \$76.75, 9 tubes.

REMLER CO., LTD.

(See Short-BCST. Wave Section)

J & L SARA CO., INC. (Sara)

123 Liberty St., New York City.
Model SJ4K—Chassis, \$43.75, 5 tubes.

SENTINEL RADIO CORP. (Sentinel)

9705 Cottage Grove Ave., Chicago, Ill.

Model 1017—HiBoy, \$94.50, 10 tubes.
Model 817—HiBoy, \$84.50, 8 tubes.
Model 1016—Console, \$79.50, 10 tubes.
Model 816—Console, \$69.50, 8 tubes.
Model 815—Midget, \$54.50, 8 tubes.
Model 521—AutoRadio, \$39.50, 5 tubes.

SPARKS WITTINGTON CO. (Sparton)

Jackson, Mich.

Model 14—LoBoy, \$71.25, 8 tubes.
Model 18—HiBoy, \$89.50, 10 tubes.
Model 27A—HiBoy, \$142.75, 13 tubes.
Model 28—HiBoy, \$168.75, 13 tubes.
Model 34—HiBoy—Automatic, \$71.25, 7 tubes.
Model 30—HiBoy, Phono-Comb., \$198.50, 10 tu.
Model 30A—HiBoy, Phono-Comb., \$238.75, 10 tu.

STEWART-WARNER CORP. (Stewart-Warner)

1826 Diversey Parkway, Chicago, Ill.
Model R40A—Mantel, \$52.45, 6 tubes.
Model R43A—Console, \$67.45, 6 tubes.
Model R45A—Console, \$79.95, 6 tubes.
Model R47A—Portable Console, \$81.95, 6 tubes.
(See Short Wave section for other models.)

STROMBERG-CARLSON TEL. MFG. CO. (Stromberg-Carlson)

110 Carlson Road, Rochester, N. Y.
Model 37—Console, \$143.00, 9 tubes.
Model 38—Console, \$172.50, 8 tubes.
Model 39—Console, \$195.00, 8 tubes.
Model 40—Console, \$232.50, 8 tubes.
Model 41—Console, Automat. Phono-Comb., \$407.50, 8 tubes.
Model 27—Console Remote Control, \$310, 9 tubes.
Model 22—Console Remote Control, \$385, 10 tubes.
Model 24—Console Remote Control, \$567.50, 10 tu.
(Prices higher west of Rockies.)

L. TATRO PRODUCTS CORP. (Tatro)

Decorah, Iowa.
(These models are all for 22-volt operation.)
Model C932—LoBoy, 9 tubes.
Model F923—LoBoy, 9 tubes.
Model F913—LoBoy, 9 tubes.
Model E83—LoBoy, 8 tubes.
Model E73—LoBoy, 7 tubes.
Model D70—Table, 7 tubes.
(Prices on request.)

TRANSFORMER CORP. OF AMERICA (Clarion)

Ogden and Keeler Aves., Chicago, Ill.
Model 220—Midget, \$31.95, 6 tubes.
Model 260—LoBoy, \$52.95, 10 tubes.
Model 260C—Chassis, \$41.95, 10 tubes.
Model 280—Console, \$73.95, 12 tubes.
Model 300—Console, \$129.50, 14 tubes.

ONLY \$2.00

Model "Y" Experimenters' super-sensitive, midget single-button microphone. Unquestioned Universal quality performance. 200 ohms. Pure Gold Spot Center Diaphragm. Price includes general catalog with diagrams.

UNIVERSAL MICROPHONE COMPANY, LTD.

Inglewood, Calif.

Jobbers! Distributors! Exporters!

Largest assortment Radio parts and accessories on the Pacific Coast. Write for prices on 4 and 5 tube TRF and Super-Heterodyne midgets. Automobile Radios.

A. FREED & SON

1440 Market St., San Francisco, Calif.

TRAVLER-RADIO & TELEVISION CORP. (Trav-ler)

1818 Washington Ave., St. Louis, Mo.
Model Mantel—\$59.50, 9 tubes.

UNITED AMERICAN BOSCH CORP. (American Bosch)

Springfield, Mass.

Model 205A—Personal, \$34.95, 5 tubes.
Model 236A—Personal, \$45.95, 6 tubes.
Model 224D—Console, \$84.95, 7 tubes.
Model 226F—Console, \$99.95, 8 tubes.
Model 242E—Console, \$69.95, 8 tubes.
Model 250M—Console, \$95.95, 10 tubes.
Model 312C—Console, \$147.95, 12 tubes.
Model 312G—Console, \$178.95, 12 tubes.
Model 100—AutoRadio, \$59.95, 7 tubes.

U. S. RADIO & TELEVISION CORP. (Apex & Gloritone)

3301 South Adams St., Marion, Ind.

Model 25A—Table, \$33.50, 5 tubes.
Model 9A—Table, \$52.50, 9 tubes.
Model 9B—LoBoy, \$63.50, 9 tubes.
Model 19B—LoBoy, \$75.00, 9 tubes.
Model 12B—HiBoy, \$107.50, 12 tubes.
Model 120B—HiBoy, \$150.00, 12 tubes.
Model 24—Midget, \$17.95, 4 tubes.

UNIVERSAL AUTO RADIO CORP. (Universal)

1223 So. Michigan Ave., Chicago, Ill.

Model 77—AutoRadio, \$69.50, 7 tubes.
Model 70—AutoRadio, \$69.50, 7 tubes.
Model 57—AutoRadio, \$49.50, 5 tubes.

WELLS GARDNER GULBRANSEN (Wells-Gardner)

816 No. Kedzie Ave., Chicago, Ill.
Model 7721—Mantel, \$49.50, 7 tubes.
Model 7725—LoBoy, \$69.50, 6 tubes.
Model 9027—Console, \$79.50, 10 tubes.
Model 2225—Console, \$94.50, 12 tubes.
Model 926—Console, \$49.50, 5 tubes.
Model 2925—Console, \$72.50, 9 tubes.
Model 1622—AutoRadio, \$57.50, 6 tubes.

WESTONE

Westone Radio Mfg. Co.,
2513 So. La Salle Ave., Los Angeles, Calif.
4 tube TRF; 4 tube TRF cabinet model; 5 tube TRF
De-Luxe. All prices on request.

WILCOX-GAY CORP. (Wilcox-Gay)

Charlotte, Michigan.

Model 255-30—Table, \$31.00, 5 tubes.
Model 2-V731—Table, \$45.90, 7 tubes.
Model 2-V7510—Console, \$59.70, 7 tubes.
Model 2-W10-515—Console, \$84.00, 10 tubes.

WONDER BAR RADIO CO. (Wonder-Bar)

6-10 Great Jones St., New York City, N. Y.
Model 51—Refreshment Bar & Radio, \$149.50, 5 tu.
Model 46—\$149.50, 6 tubes.

ZENITH RADIO CORPORATION (Zenith & Zenette)

3620 Iron St., Chicago, Ill.
Model 210—Table, \$49.95, 7 tubes.
Model 210-5—Table, \$49.95, 7 tubes.
Short best. wave set—See other section of magazine.
Model 230—Table, \$55.25, 8 tubes.
Model 240—LoBoy, \$78.75, 8 tubes.
Model 245—LoBoy, \$102.50, 8 tubes.
Model 270—LoBoy, Phono-Comb., \$123.50, 7 tubes.
Model 410—LoBoy, \$105.00, 10 tubes.
Model 411—LoBoy, \$124.00, 10 tubes.
Model 420—LoBoy, \$145.00, 10 tubes.
Model 430—Semi-HiBoy, \$166.00, 12 tubes.
Model 440—Semi-HiBoy, \$184.00, 12 tubes.
Model 220—LoBoy, \$62.50, 7 tubes.

Pause here for a moment and let us explain a new idea—

ON THE facing page is shown a specimen of one of the RADIO BUYERS' GUIDE pages which will be in each issue of "RADIO", beginning next month. It is hoped that a full page listing similar to that shown for REMLER will be secured from every radio receiver manufacturer in time to catch our December number. We anticipate that more than 100 pages of this kind of information will be in "RADIO" every month. These pages will be repeated monthly, corrected and revised, so that the information contained therein will always be accurate, re-

liable and down-to-the-minute. As new products are announced they will be shown in a boxed space at the top of each GUIDE page so that you need but page through "RADIO" and find in it, every month, the whole story on what is new in the industry, as well as the description of all other merchandise that every manufacturer offers. Many manufacturers are now preparing these GUIDE pages for our next issue. Pages for loud speakers, amplifiers, tubes, accessories, raw materials and allied merchandise will be added to the GUIDE.

---The Publishers.

THE RADIO BUYERS' GUIDE
 OF
 "RADIO"
 THE NATIONAL TRADE MAGAZINE

NOVEMBER, 1932

Who Makes It . . . Where To Buy It . . . What It Costs

REMLER

REMLER SLOGAN

"Made By The Firm As Old As Radio".

The Remler Line is
 Manufactured by—
REMLER CO., Ltd.,
 2101 Bryant Street,
 San Francisco, California.
 Telephone VAlcencia 3435.

OFFICERS OF THE COMPANY

President—Ernest G. Danielson.
 Vice-President—H. J. Banta.
 General Sales Manager—H. J. Banta.
 Chief Engineer—Ernest G. Danielson.
 Purchasing Agent—H. Daniels.
 Advertising Agency—Walron Advertising
 Co., Monadnock Bldg., San Francisco.

BRANCH OFFICES AND WAREHOUSE STOCKS

Los Angeles, Calif.—2708 So. Hill St.
 In charge of Mr. J. E. Adams.
Portland, Oregon—103 No. Broadway.
 In charge of Mr. E. A. Borgum.
Seattle, Wash.—110 Elliott St., West.
 In charge of Mr. Robert LaVoy.

SALES POLICY

Remler radios are sold direct from manufacturer to dealer at standard trade discounts. Warehouse stocks are carried at the factory in San Francisco as well as at the branch warehouses in Los Angeles, California; Portland, Oregon, and Seattle, Washington. Replacement parts can be secured from any of these warehouse offices or direct from the factory. The current REMLER line consists of four models, herein illustrated.

All parts for Remler receivers are manufactured in the factory at San Francisco. Screw-machine products and bakelite moldings are also made in the Remler factory.

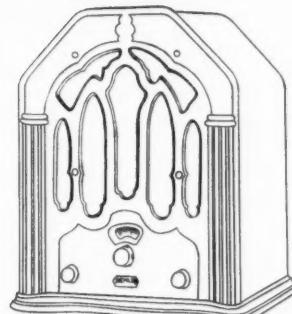
EXPORT SHIPMENTS

The Remler export business is conducted by Frazar and Co., 7 Front Street, San Francisco, California. All export inquiries should be sent direct to that address.

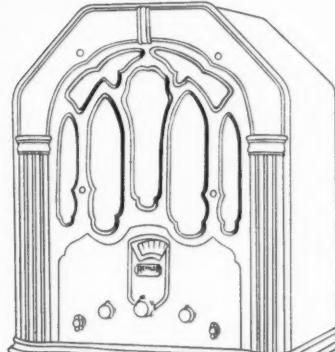
THE COMPLETE REMLER LINE



Model No. 21
 4 Tubes: 57, 58,
 47, 80. Dual
 wave. Weight
 less than 12 lbs.
 Dynamic Speaker.
 List Price,
 \$29.90, with Cunningham Tubes.



Model No. 10—Dual Wave. 6 tube Super Het. 2 58's, 1 27, 1 57, 1 47, 1 80. Dynamic Speaker. List Price, \$42.75, with Cunningham Tubes.



Model No. 15—Dual Wave. 9 tube Super Het. Tubes: 1 57; 2 56's, 3 58's, 1 55, 1 42, 1 82. Automatic volume control. Dynamic Speaker. List Price, \$59.50, with Cunningham Tubes.



Florentine Chest—Same Chassis as Model 21.
 List Price, \$39.50, with Cunningham Tubes.

REMLER REPLACEMENT PARTS LIST, SHOWING NET PRICES

To derive at List Price add 30% to Prices Shown Below.

Remler Replacement Parts sold only for use in Remler sets. These parts can be secured only from Remler Sales Offices.

CABINETS

14-11-17-15	\$4.00*
10	3.00*
21	2.25*
Console	10.00*

SPEAKERS

Magnavox 110	4.00*
Magnavox 144-154	3.50*
Magnavox 142	4.00*
Magnavox 150	3.00*
Remler	3.50*

POWER TRANSFORMERS

14-17	4.80*
11-15-19p-19f	4.00*
10	3.00*
21	3.00*
Audio Transformer	1.20
Resonated Transformer	1.60
Output Transformer	1.10
Filter Choke	1.00
R.F. Coils —3 gang	3.90
Single with trimmer	1.00
Single less trimmer	.75
OscMixer 10-3	1.10
OscMixer 15-3	1.10
Coil Shields	.10
I.F. Coils —3 gang (17)	6.30
Single	1.50
Short Wave Coils—21-3	.50
Variable Condensers—21	2.50

VARIABLE CONDENSERS

21	2.50
14-17-15, etc.	4.00
2 gang 10-3	2.50
Coil trimmer	.25
V.C. trimmer strip	.25

SHORT WAVE SWITCH

21	.61
10-3—15-3	.80
Tone control switch	.15
Toggle switch	.20
Osc. Parallel Trimmer	.75
Chassis frame 14-15-17-11	1.10
Chassis frame 10	.90
Chassis frame 19	2.00
Volume Control with switch	.60
Volume control less switch	.50

RESISTORS

1 watt—50,000	.09
2 watt	.20
Resistor block	.90

CONDENSERS

Mica	.15
.02, .05, .1	.08
.5	.17
Block (.5, .1.1)	.75
8 mfd.	.60
4 mfd.	.45
2-4-8 Elect.	.75
Clamp	.10

*Items take 5% additional Government tax.

"The Automatic Tube Salesman"



It's
Portable

THE

P R E C E P T O R

ALL PURPOSE TUBE TESTER

Will Sell More Tubes for You DIFFERENT!

IT APPEALS TO THE LAYMAN BECAUSE
HE CAN UNDERSTAND HOW IT OPERATES.

SCIENTIFIC! BECAUSE IT IS CALIBRATED TO THE ACTUAL
CHARACTERISTICS OF PERFECT TUBES.

TIME TESTED! NEVER BECOMES OBSOLETE BECAUSE PRO-
VISION IS MADE FOR TESTING NEW TUBES.

AS THEY ARE INTRODUCED. HAS BEEN USED FOR YEARS IN THE SHOPS
OF ONE OF THE WORLD'S GREATEST RADIO AND TUBE MANUFACTURERS.



The Preceptor Tube Tester is making
money for many of the best Radio
Dealers. It will make money
for you, too.

The **Preceptor** *All purpose*
Tube Tester

**NET
PRICE
\$59.50
F.O.B.
FACTORY**

**THE GREATEST AID TO TUBE SALES EVER DEVISED
RADIOPHONE SALES CORPORATION**

RADIO JOBBERS — There Is Some Territory Still Open
CALIFORNIA, OREGON
Write Us For Our Distributor's Proposition

THE RADIO BUYERS' GUIDE

OF
"RADIO"
THE NATIONAL TRADE MAGAZINE

NOVEMBER, 1932

Who Makes It . . . Where To Buy It . . . What It Costs

TESTING EQUIPMENT

SUPREME

Manufactured by Supreme Instruments Corporation, Greenwood, Mississippi. Sold through the jobbing trade.

Products:

Supreme Diagnometer AAA1.

Dealer's Net Price, \$147.50, FOB Greenwood, Mississippi. Combines Analyzer, Tube Tester, Shielded Oscillator, Ohmmeter-Megohmmeter, Capacitor Testor—all in one instrument. Makes every conceivable test, Analyzes any circuit or part of set; tests any type of tube; including the 7-pin, dual-diode and dual-diode-triode tubes. "A complete testing laboratory in itself."

Supreme Model 90 Set Analyzer.

Dealer's Net Price, \$78.50, FOB factory. A Single Meter Analyzer featuring the patented Supreme "MULTIMETER", the only meter that reads "A.C. and D.C." on the same scale, the same calibration. Is only commercial analyzer providing complete rectifier circuit analyses, including helium rectifier circuits. No panel adaptors required for accommodation of new 6 or 7 pin tubes. Six AC or DC measuring ranges, 0-2.5 up to 0-1000 volts. Ohmic scale for direct readings of resistance values up to 500,000 ohms in two ranges of 0-5000 ohms. and 0-500,000 ohms.

Supreme Model 56 Set Analyzer.

Dealer's Net Price, \$56.25, FOB factory. Has SUPREME "MULTIMETER". Complete resistance analysis made directly on analyzer panel. Will accommodate all 4 prong, 5, 6 and 7 prong tubes, without use of adaptors.

Supreme Tube-O-Meter, Model 66.

Dealer's Net Price, \$59.75, FOB factory. Visible tube testing display instrument, also available with stand at \$7.50 additional. Tests all new tubes, as well as old types. Meter reading—"Bad—?—SATISFACTORY." Neon tube indicators for voltage variations and to provide accurate adjustment.

Supreme Counter Tube Tester, Model 18.

Dealer's Net Price, \$26.50, FOB factory. Tests all types of tubes, including 6 and 7 prong types. Grid-shift test provided with biasing arrangement, automatically determined by plate current load of tube under test.

Supreme Model 40 Tube Tester

Dealer's Net Price, \$30.00, FOB factory. Has 3½ in. D'Arsonval type meter, 2 scales, 80/8.0 ma. Tests all tubes, including new 6 and 7 prong types. "Grid shift" test of all amplifiers is provided. Incorporates gas test for amplifiers, cathode heater short test, and tests both plates of full wave rectifiers.

Supreme Oscillator, Model 70.

Dealer's Net Price, \$49.75, FOB factory. Completely shielded, adaptable for generating signals over a comparatively wide range of audio frequencies. Fundamental

range, 90-250 k.c., with multiples for all higher frequencies from approximately 90-1500 k.c. 100% modulated. Free from leakage and feedback when operated from the AC line.

Supreme Model 60 Oscillator.

Dealer's Net Price, \$30.00, FOB factory. Has no output meter but designed for use with. This is an AC operated oscillator individually calibrated for all ranges from 90-1500 k.c. 100% modulation and complete attenuation without leakage.

Supreme Model 75 AC-DC Volt-Ohm-Milliammeter.

Dealer's Net Price, \$46.50, FOB factory. 6 output meter ranges, up to 1000 volts. 5 AC millamp ranges up to 250 mils. 5 DC millamp ranges up to 250 mils. 2 Resistance ranges, 0/5000/500,000 ohms. Supreme Model 44 DC-Volt-Ohmmeter.

Dealer's Net Price, \$30.00, FOB factory. Uses self-contained battery for measurements in two ranges, 0/1000 and 0/100,000 ohms. External connection for 45V battery to increase range to 1,000,000 ohms. Also DC voltage range of 0/10, 0/100, 0/250, 0/750 volts available.

Supreme Model 33 Ohmmeter.

Dealer's Net Price, \$26.75, FOB factory. Self-contained, 3½ in. bakelite cased meter, calibrated in resistance ranges of 0/1000 and 0/100,000 ohms, actuated by self-contained battery. Provided with external connections for 45 v. battery to extend range to 1,000,000 ohms.

Other Supreme Instruments:

Model 57 Decade Resistance Bridge, 10 ohms to 10 megohms, and may be set at any value in multiples of 10 ohms. Dealer's Net Price, \$19.75, FOB factory.

Model 77 Universal Analyzer Converter. For bringing up to date obsolete or partially obsolete test equipment. Dealer's Net Price, \$18.50, FOB factory.

Model 88 Electrolytic Capacitor Tester. Suitable for insulation leakage tests and for any high resistance continuity work up to 3,000,000 ohms, or more, depending upon sensitivity of meter used. Dealer's Net Price, \$20.50, FOB factory.

Model 62 Tube Testing Power Unit. Essentially a Model 40 Tube Tester without meter. Tests all tubes without adaptors. Dealer's Net Price, \$16.95, FOB factory. NOTE—SUPREME also sells all PARTS required to build ANY of the instruments herein described. Those who build their own can secure the price list by writing the factory.

HICKOK

Manufactured by Hickok Electrical Instrument Co., 10514 Dupont Ave., Cleveland, Ohio. Pacific Coast office: 426 Larkin St., San Francisco, Calif.

Product:

"STATIKTESTER" (New) Tests all new type tubes and receivers. Complete set tester which measures every unit of a radio receiver.

F.R.C.

(Franklin Radio Corporation), 333 Linden Ave., Dayton, Ohio. Products:

F.R.C. Model H-33 Tube Checker.

Dealer's Net Price, \$29.75, 10% higher west of Rockies. Tests all tubes announced to date, including the 83, 85 and 89. Provision also made for testing the 6.3 volt series of 6-prong tubes and the 2.5 and 6.3 volt series of 7-prong tubes, without use of adaptors. Energized with proper DC voltages of various magnitudes as governed by characteristics of tubes. Same voltages are applied to tubes when tested as when in use in standard receiving sets. Can also be used to make continuity and point-to-point tests. Voltage taps provided for this purpose. Also for testing condensers of all kinds, and resistors up to 2,000,000 ohms; 25 cycle-220 volt instruments also available at \$1.00 additional to list price.

F.R.C. Model D-33 Tube Checker.

Dealer's Net Price, \$23.75; 10% higher west of Rockies. Add \$1.00 for 25 cycle-220 volt models. Model D-33 identical to Model H-33, except no provision made for continuity tests, etc. Jewell & Weston meters used.

F.R.C. Model 1, Voltmeter-Ohmmeter.

Dealer's Net Price, \$24.00, with test leads and battery. Laminated Bakelite Panel. Jewell Meter. Double scale; 0-100,000 ohms and 0-300 volts. Resistance range can be reduced to 1/10th value and voltage range reduced to 3 or 30 volts and increased to 600 volts. As voltmeter, has resistance of 1000 ohms per volt in each of its ranges, thereby measuring plate voltage without distortion.

PRECEPTOR

Manufactured by Radiophone Sales Corporation, 1924 Broadway, Oakland, Calif. (Sold through the jobbing trade).

Products:

"Preceptor" all-purpose TUBE TESTER. Calibrated to actual characteristics of perfect tubes. Operates on a method of comparison between the known characteristics of any given tube and the tube to be tested. Any tube tested in the PRECEP-TOR is in the condition indicated. Operation is based on the omission of the tube being tested. Indicates accurately the amplifying quality of the tube. Indicates loose elements. Indicates high resistance connections (often the cause of fading). Indicates the slightest trace of gas. Indicates noisy tube. Will indicate any kind of short in a tube without injury to the instrument and without any danger of burning out fuses. Available in portable and counter types. Price, \$59.50 net.

How To Sell

A Monthly Department Conducted
By DON C. WALLACE, W6ZZA



Amateur Supplies

DEALERS ARE INVITED TO USE THESE
COLUMNS FOR EXCHANGE OF IDEAS.

HERE was a time not long ago when radio stores existed for one purpose; that of supplying amateur transmitting and receiving equipment.

During the rush and the influx of the broadcast listener, a new crop of radio dealers came into the business who knew nothing of the needs and requirements of the amateur.

Consequently the amateur was forced to manufacture a great portion of his own equipment because no manufacturer supplied it, and if he did supply it there were no jobbers and no dealers where the amateur could go consistently to buy this equipment.

When the radio industry as a whole awoke to find it was not selling quite so much, the stores that were handling amateur equipment found their business was not affected so materially. Business continued as usual.

From a business standpoint this amateur radio business is good business because it is cash. The transmitting amateur requires apparatus of the highest type. He is very proud of the efficiency of each piece and article of equipment he uses. He gradually becomes enthused over the possibilities of

his set with a new part or piece of equipment and continually buys and spends his money for that which he is most interested in—radio.

Enthusiasm such as this is catching. It extends to his friends, and in turn to their friends. In the early days of broadcast radio, to sell a lot of sets one simply sold one radio set in a neighborhood and word of mouth advertising did the rest. Contrast this with the present-day feeling when almost everyone seems to apologize for his radio rather than to boast it.

Who ever heard of an amateur apologizing for his apparatus? He is always enthusiastic about it; he thinks it is the most wonderful thing on earth and is not afraid to tell anybody so, either by word of mouth or over the air.

Creating and encouraging this enthusiasm is good business psychology. From the business angle the dealer must capitalize on this enthusiasm, partake in it himself and not refer to the radio amateurs as "a bunch of kids"—many of them are past forty. They naturally would resent that feeling and avoid that particular dealer. Those who realize that they are sincere, enthusiastic,

progressive young business men with an ever absorbing hobby have found out what a wonderful thing it is.

To sell equipment to the amateur it is necessary to partake of their viewpoint. Only through the study of amateur radio can a reason for this enthusiasm be developed. Someone in the organization (and it might just as well be the boss) must be inherently interested in radio. He should study the code, learn the hook-ups used in transmission and plan to ultimately get his government license so he can be on the air for an hour or so in the evening.

The dealer who becomes interested in amateur radio automatically gets into the business. He will then find that he has a group of new customers who will also buy many other items of merchandise, who will also bring in their friends, and who will pull for him and be loyal to him far beyond the point he has been accustomed to.

This, of course, means new merchandise on the shelves and a distinct feeling that some of it is the best to be obtained and that it will be a great improvement to the performance of the amateur radio set.

Partial Directory of Manufacturers Who Make Amateur Equipment

AMATEUR RECEIVER & TRANSMITTER MANUFACTURERS

RADIO ENGINEERING LABS., INC.
100 Wilbur Ave., Long Island City, N. Y.
Complete line of every conceivable type of amateur receiving and transmitting sets.

NATIONAL CO., INC.
61 Sherman St., Malden, Mass.
Complete line of amateur receiving sets, also makers of very large line of parts for amateur use. Special duty amateur supplies and laboratory equipment.

HAMMARLUND MFG. CO.,
424 West 33rd St., New York, N. Y.
Makers of the famous Hammarlund "PRO" custom built short wave receivers for amateur and general short wave use. Also makers of many parts for amateur sets.

CHAS. HOODWIN CO.,
4240 Lincoln Ave., Chicago, Ill.
The "AERO" line. Complete amateur transmitters and receivers and parts for same. Also makers of AERO WORLD WIDE 1 tube short wave set, 14-550 meters.

UNITED RADIO BUILDERS,
1234 Springfield Ave., Irvington, N. J.
Special amateur equipment to order. Jobbers for all known makes of amateur sets and supplies.

ALLEN D. CARDWELL CO.,
81 Prospect St., Brooklyn, N. Y.
Makers of the Cardwell "UNXLD" line of amateur condensers of all sizes and types. Also other special amateur equipment.

Dealers interested in selling amateur supplies will find here a listing of a number of outstanding manufacturers who specialize in amateur transmitting and receiving equipment.

T. F. CUSHING,
345 Worthington St., Springfield, Mass.
Makers of sectional constructional transmitter panels and racks, all sizes.

HARRISON RADIO CO.,
142 Liberty St., New York, N. Y.
Makers of the "ROYAL" amateur receiver, any band. Various models, 2 or 3 tubes, also amplifiers for same.

COLLINS RADIO CO.,
Cedar Rapids, Iowa.
Makers of the COLLINS Transmitter. Also makers of amplifiers, condenser type microphones and a complete line of audio transformers and special transformers for all amateur and special purposes.

UNIVERSAL MICROPHONE CO., LTD.,
424 Warren Lane, Inglewood, Calif.
Makers of complete line of microphones for amateur radiophones and for all other purposes. Also special microphone amplifiers and associated equipment.

BURGESS BATTERY CO.,
111 West Monroe St., Chicago, Ill.
Makers of the BURGESS SUPER "B" BATTERIES for amateur receivers.

THE VIBROPLEX CO., INC.,
825 Broadway, New York, N. Y.
Makers of the "VIBROPLEX" "bug" (automatic transmitting keys).

GIRARD HOPKINS,
1437 - 23rd Ave., Oakland, Calif.
Makers of high voltage amateur transmitting condensers and a complete line of replacement condensers, filters, chokes, etc., for both amateur and commercial purposes.

E. F. JOHNSON CO.,
Waseca, Minnesota.
Makers of Standoff insulators and special sockets for amateur work. Also feeder spreaders for amateur antennae.

JACK BRADLEY CO.,
288 Golden Gate Ave., San Francisco, Calif.
Builders of all types of regular and special amateur equipment of any kind. Feeder spreaders. Power units. Amplifiers, microphones, antenna equipment, and a complete stock of all things needed for amateur stations. Bakelite panels and bakelite engraving and nameplates, all kinds.

THE WIRELESS SHOP,
150 Glendale Blvd., Los Angeles, Calif.
A complete manufactured line of deluxe transmitting condensers for amateur work. Every size.

TRIMM RADIO MFG. CO.,
1528 Armitage Ave., Chicago, Ill.
TRIMM featherweight headphones for amateur and other uses. 4000 ohms. Lightest weight headphones made.

PREMIER CRYSTAL LABORATORIES, Inc.
55 Park Row, New York, N. Y.
Makers and grinders of amateur crystals for any specified frequency. Also oscillating crystals for commercial stations.

THE RADIO BUYERS' GUIDE OF "RADIO"

NOVEMBER, 1932

THE NATIONAL TRADE MAGAZINE

Who Makes It . . . Where to Buy It . . . What It Costs

AUTO RADIO SETS

ATWATER-KENT

Atwater-Kent Mfg. Co.
4700 Wissahickon Ave., Philadelphia, Pa.
AUTORADIO, Model 91, \$73.25, 150-550 meters.
9 tubes: 3 36's; 4 37's; 2 38's.

BELMONT (Freshman-Belmont)

Belmont Radio Corp.
520 North Michigan Ave., Chicago, Ill.
AUTORADIO, Model 70-B, \$69.50, 200-550 meters.
6 tubes, including rectifier tube in B Eliminator,
which is built into set.
Tubes: 2 36's; 1 37; 2 39's.
Wave range: 200-550 meters.

CENTURY

Century Radio Products Co.
3009 No. Austin Blvd., Chicago, Ill.
AUTORADIO, Model 7-38. Price on application.
7 tubes: 3 39's; 2 37's; 2 38's.
Wave range: 200-550 meters.

CROSLEY

Crosley Radio Corporation
Cincinnati, Ohio.
AUTORADIO, Model 96, \$39.50.
6 tubes: 3 39's; 1 36; 1 85; 1 89.
Wave range: 195-550 meters.

ELECTRIC AUTO-LITE

Electric Auto Lite Co.
Toledo, Ohio.
AUTORADIO, Model 3722, \$89.50, including B
eliminator.
7 tubes: 3 39's; 1 36; 1 37; 2 41's.
Wave range: 200-550 meters.

EL REY

El Rey Radio Mfg. Co.
8406 So. Broadway, Los Angeles, Calif.
AUTORADIO, Model "CarSet", \$49.50, with remote
control.
6 tubes: 3 39's; 1 36; 1 37; 1 41.
Wave range: 150-550 meters.
4 tube AutoRadio, \$24.50, list.

FLEETWOOD

Fleetwood Radio Corporation.
Fleetwood, Pennsylvania.
AUTORADIO, Model GF-106, price on application.
6 tubes: 3 39's; 1 36; 1 37; 1 41.
Wave range: 200-550 meters.

FRANKLIN

Franklin Radio Corp.
333 Linden Ave., Dayton, Ohio
AUTORADIO, Model 100, price on application.
6 tubes: 3 36's; 1 37; 2 38's.
Wave range: 200-550 meters. Also special models.

GALVIN (Motorola)

Galvin Manufacturing Corp.
847 West Harrison St., Chicago, Ill.
AUTORADIO, Model 88, \$74.95, with inbuilt B elim.
8 tubes: 2 36's; 2 38's; 1 39; 1 85; 1 Rect.
Wave range: 200-550 meters.
AUTORADIO, Model 61, \$59.50, with inbuilt B elim.
6 tubes: 2 36's; 1 39; 1 41; 1 85; 1 Rect.
Wave range: 200-550 meters.

GENERAL ELECTRIC (G.E.)

AUTORADIO, Model A-90, \$76.75, battery operated.
9 tubes: 3 36's; 4 37's; 2 112-A's.
Wave range: 200-550 meters.

GRIGSBY GRUNOW (Majestic)

Grigsby-Grunow Co., 5801 Dickens Ave.,
Chicago, Ill.
AUTORADIO, \$49.50, list, complete.
7 tubes: 3 36's; 2 37's; 2 38's.

HOWARD

Howard Radio Co., South Haven, Michigan.
AUTORADIO, Model 33, price on application.
8 tubes: 4 44's; 1 37; 1 69; 2 41's.
Wave range: 150-550 meters.

JACKSON-BELL

Jackson-Bell Mfg. Co., Ltd.
6500 McKinley Ave., Los Angeles, Calif.
AUTORADIO, Model 205, \$39.95.
5 tubes: 2 58's; 1 57; 1 55; 1 47.
Wave range: 200-550 meters.

J.M.P. (Auto Dial)

J.M.P. Mfg., Inc., Milwaukee, Wis.
AUTORADIO, Model 42, \$40.00.
5 tubes: 2 24's; 1 27; 1 35; 1 47.
Wave range: 200-550 meters.

KELLER-FULLER

Keller-Fuller Mfg. Co., Ltd.,
4957 Sunset Blvd., Los Angeles, Calif.
AUTORADIO, 9 tube Super-Het., with "B" Eliminator, \$80.00, list.

KARADIO

Karadio Corp.
1619 Hennepin Ave., Minneapolis, Minn.
AUTORADIO, Model 9, \$86.50.
9 tubes: 3 36's; 3 37's; 3 71's.
Wave range: Standard or special.
AUTORADIO, Model 11, \$112.50, inbuilt B elim.
11 tubes: 4 36's; 3 37's; 4 71's.
Wave range: Standard or special.

MISSION BELL

Mission Bell Mfg. Co., Inc.
1455 Venice Blvd., Los Angeles, Cal.
6 tube Super-Het. Auto-House Combination, \$49.50,
list. 6 tube Super-Heterodyne all-electric, \$59.50,
list. AUTO-B Eliminator, \$18.50, list.
Wave range: 175-550 meters.

MY OWN

My Own Radio, Inc.
1800 Grace St., Chicago, Ill.
Battery model, \$16.95, police calls and standard
broadcast range.
Has 5 tubes, 6.3 v., series.

NORTHWEST SPECIALTY (Walton)

Northwest Specialty Service, Ltd.,
Waukegan, Ill.
AUTORADIO, Model M, price on application.
6 tubes: 2 39's; 1 36; 1 37; 2 38's.
Wave range: 175-550 meters.

PHILCO (Transitone)

Philco Radio & Television Corp.
Ontario and C Sts., Philadelphia, Pa.

AUTORADIO, 3 models.
\$69.50 model has 5 tubes: 3 36's, 1 38, 1 41.
\$79.50 model has same tubes but is supplied with
B Eliminator.
\$94.50 model has 6 tubes: 2 41's, 1 38, 3 36's. B
Eliminator included with this model.

ROAMER

Manhart Radio Co.,
6219 So. Hoover St., Los Angeles, Calif.
AUTORADIO, 4, 6 and 8 tube sets, \$24.50, \$39.50
and \$69.50, list.

RCA-VICTOR

RCA-Victor Co., Inc., Camden, N. J.
AUTORADIO, Model M-30, \$76.75.
9 tubes: 3 36's; 4 37's; 2 112-A's.
Wave range: 200-550 meters.

SENTINEL

Sentinel Radio Corp.
9705 Cottage Grove Ave., Chicago, Ill.
AUTORADIO, Model 521, \$39.50.
5 tubes: 1 36; 2 39's; 1 41; 1 85.
Wave range: 200-550 meters.

SPARTON

Sparks-Withington Co.
Jackson, Michigan.
AUTORADIO, Model 34, \$71.25.
7 tubes: 2 38's; 2 39's; 1 36; 1 37; 1 70.
Wave range: 200-560 meters.

UNITED AMERICAN BOSCH (American Bosch)

United American Bosch Corp.
Springfield, Mass.
AUTORADIO, Model 100, \$59.95.
7 tubes: 3 36's; 1 37; 3 38's.
Wave range: 200-550 meters.

UNIVERSAL

Universal Auto Radio Corp.
1223 So. Michigan Ave., Chicago, Ill.
AUTORADIO, Model 77, \$69.50.
7 tubes: 1 Wund; 2 44's; 2 41's; 1 37; 1 39.
Wave range: 200-550 meters.
AUTORADIO, Model 70, \$69.50.
7 tubes: 3 36's; 2 37's; 2 38's.
Wave range: 200-550 meters.
AUTORADIO, Model 57, \$49.50.
5 tubes: 1 Wund; 2 44's; 1 39; 1 41.
Wave range: 200-550 meters.

WELLS-GARDNER

Gulbransen, Wells-Gardner, Division of,
816 No. Kedzie Ave., Chicago, Ill.
AUTORADIO, Model 1622, \$57.50, with B elim.
6 tubes: 3 39's; 1 36; 1 37; 1 41.
Wave range: 200-550 meters.



G-H

WEST COAST MANUFACTURERS OF

By-Pass Condensers of All Kinds
Filter Condensers of All Shapes & Capacities
Replacement Condensers for Any Need
Condenser Banks for Any Purpose
Transmitting Condensers
Line Filters of All Types
Carbon Resistors of Any Value



SOLD BY ALL WESTERN JOBBERS

or write

GIRARD-HOPKINS

1437 23rd AVENUE OAKLAND, CALIFORNIA

RADIO BUYERS' GUIDE of "RADIO"

CONDENSERS

AEROVOX

Made by Aerovox Corporation, 78 Washington St., Brooklyn, N. Y.

Dry electrolytic condensers, all sizes. Filter blocks. Buffer blocks. Socket Power condensers. High Voltage condensers. Transmitting condensers. By Pass condensers. Complete periodical showing Aerovox products and circuit diagrams, with technical data, free by writing manufacturer.

CONCOURSE

Made by Concource Electric Co., Inc., 387-311 Wales Ave., New York, N. Y.

(See advertisement in this section).

Makers of practically all types of small condensers both for new equipment and for replacement purposes. Sold through the jobbing trade and by most dealers in parts.

CONCOURSE popular V-8 type metal cased filter condensers, dry electrolytic, in all useful sizes. V-4, 4 mfd., \$1.10, list. V-6, 6 mfd., \$1.20, list. V-8, 8 mfd., \$1.25, list. Also cardboard encased condensers, all popular sizes from 2 to 16 mfd., listing from 70 cents to \$2.25. Attractive discounts to the trade. Type M Condensers, multisecton, 4 to 54 mfd., listing from \$1.10 to \$7.00. Dry electrolytic condensers in square metal containers, multi-units, sizes from 8 to 16 mfd., \$1.25 to \$2.25, list. Auto generator spark suppressor condenser, type G-10, 10 mfd., 60c, list. Type A-1 dry electrolytic condensers in metal containers, 1 to 8 mfd., 60c to \$1.25, list. Type C-2, metal containers, 2 to 12 mfd., 80c to \$2.00, list. Audio freq. by pass dry electrolytic condensers in metal containers, 5 to 30 mfd., 60c to 90c, list. PT styles, small dry electrolytic condensers in tubular cardboard con-

tainers, $\frac{1}{2}$ mfd. to 25 mfd., 35c to 65c, list. Wax impregnated paper condensers in tubular cardboard containers, sizes from .0001 to 0.5 mfd. List prices from 30c to 65c. Small space multiple tap condensers in tubular cardboard containers, .01 to .25 mfd. Priced from 50c to \$1.40, list. Unmounted wax impregnated cartridges for bypassing and filtering, .25 to 1 mfd. List prices from 25c to 65c. High Voltage filter condensers in metal containers, 1 mfd. to 4 mfd., 800 D.C.W.V. to 1000. List prices from \$1.40 to \$6.75. Also other special types. Complete catalog on request from manufacturer. West Coast offices, Norton Sales Co., 274 Brannan St., San Francisco.

ELECTRAD

Made by Electrad, Inc.,

175 Varick Street, New York, N. Y.

Electrad By-Pass condensers in all popular sizes. Information on special condenser on request. Catalog of Electrad parts, including volume controls, by pass condensers, resistors and volume controls sent free by writing manufacturer. Electrad Resistor Replacement Guide, \$1.00 per copy, postpaid, shows proper replacement resistors for all circuits. Electrad also makes complete amplifiers.

FLECHTHEIM

Made by A. M. Flechtheim & Co., Inc., 136 Liberty Street, New York, N. Y.

Compact heavy duty filter condensers, .05 to 4 mfd., from \$1.00, list, to \$4.50, list. Compact by-pass filter condensers in de-luxe metal containers, 0.1 to 4 mfd., \$0.35 to \$1.80, list, for the 200 v.d.c. types; and from \$0.45 to \$2.40, list, for the 400 v.d.c. types. Also standard By-Pass and filter condensers for small-space installation, 0.1 to 4 mfd.

G-H CONDENSERS

Made by Girard-Hopkins, 1437 - 23rd Avenue, Oakland, Calif.

(See large advertisement in this section) Complete line of low priced replacement condensers for all types of receivers and transmitters. Line Filters. Also standard condenser blocks, all sizes. By-Pass condensers. Special heavy duty amateur and commercial transmitting condensers, oil-immersed. Low priced line of amateur condensers. Carbon resistors of any value. Attractive trade discounts and special discounts to amateurs. Complete information by writing manufacturer. Immediate delivery of all condensers from stock.

MORRILL & MORRILL

Makers of MORRILL & MORRILL CONDENSERS. Also Siemens & Halske U. S. Distributors.

30 Church Street, New York City, N. Y.

Uncased & Tubular condensers. 0.1 mfd. to 4 mfd. in uncased types. 600 w.v.DC. 1500 to v.DC test voltage. List prices begin at 50 cents. Type G Tubular condensers from .00011 mfd. at 30c net to .11 mfd. at 55c net. Sole U. S. Distributors for Siemens & Halske Condensers and Resistors. West Coast representative, Don C. Wallace, 4214 Country Club Drive, Long Beach, Calif.

TOBE

Tobe Deutschmann Corp., Canton, Mass.

Tobe is again manufacturing filter condenser blocks in all popular sizes. Also TOBE Filterette condensers, the only line of its kind made. The complete TOBE catalog, showing all TOBE condensers and FILTERETTES can be secured by writing the manufacturer.

CONCOURSE CONDENSERS

ANY SIZE . . . ANY TYPE . . . LOW PRICED
YOU CAN'T BUY BETTER CONDENSERS



CONCOURSE is world-famed for building condensers that are trouble-free. When you begin using CONCOURSE your condenser problems end. The CONCOURSE line is complete. From the smallest condenser, at low prices, to the large "M" Type, CONCOURSE makes the exact type and size for **EVERY** requirement. Don't just ask for condensers—ASK FOR CONCOURSE—and you get the **BEST**, no matter what you pay.

HERE IS THE ANSWER TO YOUR PROBLEMS . . .

Dry Electrolytic condensers in square cardboard containers. The "Type P" line. From 2 to 16 mfd. 500 and 600 DC peak voltage. List price from 70c to \$2.25. Service Men accept no substitute.

Type V-8, metal case, with ribs or vanes. The V-4, 4 mfd. 600 DC peak voltage. 2" x 1 1/2", List Price \$1.10. The V-6, 6 mfd. 3 1/2" x 1 1/2", \$1.20 list. V-8, 8 mfd. \$1.25 list.

REPLACEMENT BANKS. Round metal cans. The "M" line. In single units and in multiples, up to 9-9-18-18 mfd. Prices from \$1.10 to \$7.00, list.

DRY ELECTROLYTIC CONDENSERS IN TUBULAR CARDBOARD CONTAINERS. For filtering, audio-frequency and by-passing or C-Bias. This is the "PT" line. 1/2 mfd. to 25 300 working volts. 35c to 65c list.

WAX IMPREGNATED PAPER CONDENSERS IN TUBULAR CARDBOARD CONTAINERS. Non-inductively wound. Sizes from .0001 to .5 mfd. Compact size. 20c to 65c mfd. Very compact. Solid tinned wire leads. From 25 to

UNMOUNTED WAX IMPREGNATED PAPER CARTRIDGES. The "B8" line. Sizes from .25 to 1 mfd. 25c to 65c list. Tinned copper or insulated wire leads.

BY-PASS AND FILTER CONDENSERS in metal containers, 2" high. The "CB" line. .5 to 1 mfd. 50c to \$1.15 list. 800 to 1000 VOLT CONDENSERS, 1 to 4 mfd. The "HV" line. \$1.40 to \$6.75 list.

Also suppressor condensers, 60c. Other sizes and types of dry electrolytic condensers in metal cases, 60c to \$2.40 list. TRADE DISCOUNTS TO DEALERS AND SERVICE MEN. SPECIAL MODELS FOR MANUFACTURERS. Write at once for further information.

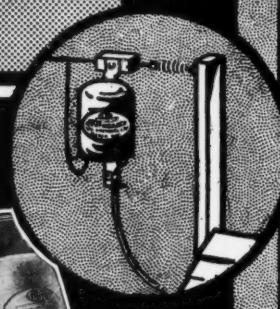
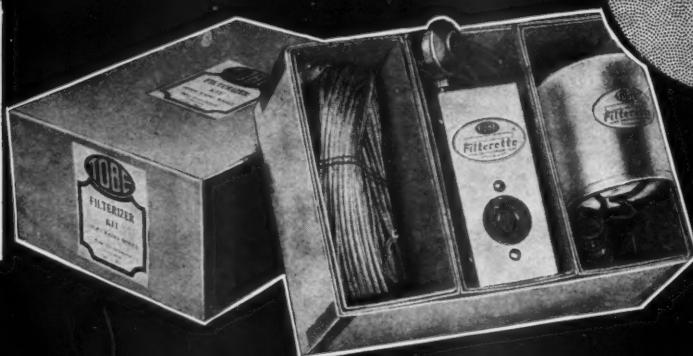
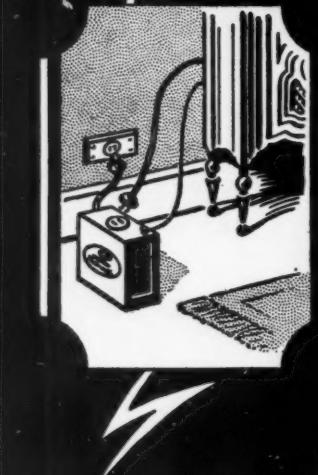
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CONCOURSE ELECTRIC COMPANY, Inc. 387-411 WALES AVE., NEW YORK, N. Y.

On the Pacific Coast—NORTON SALES CO., INC. - 285 BRANNAN STREET (Hasslett Warehouse Co.) SAN FRANCISCO, CALIFORNIA
316 COMMERCIAL STREET (Los Angeles Warehouse Co.) LOS ANGELES, CALIFORNIA

TOBE

Filterizer STOPs RADIO NOISES



NO RADIO NOISES IF IT'S "FILTERIZED"

The RF-1 Filterette at the Antenna.

The RF-2 Line Filterette at the Receiver.

75 Feet of Filterizer Shielded Lead-in —

OUT GOES THE RADIO NOISE

The FILTERIZER Kit enables you to "spike" competition from the so-called "noiseless" receiver and makes it easier to sell your own.

No matter what make of set, and regardless of conditions, the FILTERIZER will afford relief. It is not a "gadget" but one of our developments after years of experience in "noise" elimination. The FILTERIZER may be used with any receiver OLD or NEW.

Paul C. Heyer, Filterette Service Station, Erie, Pa. writes, "Installed the FILTERIZER. It does all you claim for it."

Louis M. Strauss, Newark Electric Company, Chicago, wired, "FILTERIZER O.K. Should be 'hot' number. Rush fifty."

Take advantage of the present market, and be able to supply this unit NOW.

TOBE DEUTSCHEMANN CORPORATION, Filterette Division, CANTON, MASS.

235 Ninth Street, San Francisco, Calif.

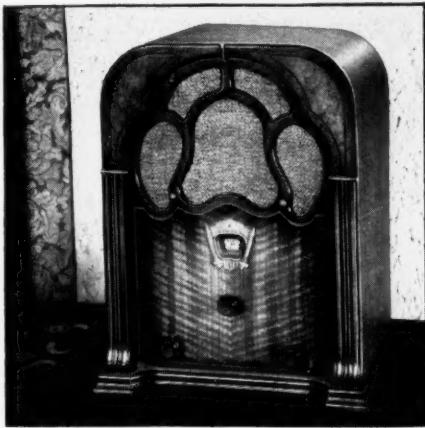
The Acknowledged Authority on Radio Interference—Makers of FILTERETTES, the Accepted Remedy

CROSLEY

Scores 6 More Hits!

A 5-tube superheterodyne—factory balanced—neutralized—non-regenerative—full floating dynamic speaker—many features hitherto only found in sets selling at much higher price—a

beautiful cabinet with genuine walnut overlay . . .



The Crosley SEXTET

A 6-tube superheterodyne complete with tubes list \$3495
(Tax Paid)

Cabinet front panel of figured oriental walnut veneer, Birds-eye maple overlay on arch. Reeded pilasters. Dimensions: 16 $\frac{1}{8}$ " high, 13 $\frac{3}{4}$ " wide, 8 $\frac{3}{4}$ " deep.

CHASSIS SPECIFICATIONS

Six tube superheterodyne employing automatic volume control, new 2 $\frac{1}{2}$ volt heater type tubes. Three gang tuning condenser. Pentode output. Continuous static and tone control. Full floating moving coil dynamic speaker and other late developments.

This super-performing 6-tube chassis is also available in an attractive console model

The Crosley Sextet Lowboy

\$3995 complete
(Tax Paid)

Dimensions: 40" high, 24 $\frac{1}{8}$ " wide,
13 $\frac{1}{2}$ " deep.

The Crosley BOOK CASE

(Library Universal)

Suggestive of its function as a bringer of knowledge and entertainment this marvelous receiver represents a set of books bearing these titles: Music, religion, education, news, politics, sport, entertainment, humor. It is so real in appearance that many persons, glancing at it, will try to remove one of the arts or sciences from the study. Book backs are covered with fine grade of leatherette of antique coloring. Backs and sides are embossed and embellished with gold, as are the titles and the name, "Library Universal." The book backs are mounted on two doors which swing open permitting the radio to be operated in the same manner as a conventional table model set. Dimensions: 10 $\frac{1}{2}$ " high, 13 $\frac{3}{4}$ " wide, 8 $\frac{9}{11}$ " deep. Chassis: 5-tube superheterodyne as described under the Crosley Jewel Case.

With all its beauty, charm and novelty, this lovely set will move specially at the low list price of

\$34.75
(Tax Paid)



The Crosley FIVE R

This is the last word in a small radio. Inbuilt sensitivity. Factory balanced. Excellent tone. Truly a "5" in the price range of a "4". Experience proves that the public demands five tubes. Whistles and birdies common in four-tube receivers are virtually eliminated through the use of five tubes. For that reason five-tube radios have outsold four-tube models even when there was a price differential of six or seven dollars between the two. You know this from your own experience.

Five-tube neutralized superheterodyne employing new 2 $\frac{1}{2}$ volt heater type tubes. Illuminated dial. Volume control. On-off switch. Full floating moving coil dynamic speaker and other recent developments. Chassis completely balanced and non-regenerative. Cabinet of Gothic design beautifully finished in Adam brown with front panel of stump walnut veneer.

\$19.99

TAXPAID

This fine 5-tube chassis is also available in a beautiful console model—

The Crosley Fiver Lowboy

\$29.99 complete
(Tax Paid)

Dimensions: 40" high, 24 $\frac{1}{8}$ " wide,
13 $\frac{1}{8}$ " deep.

The Crosley JEWEL CASE



Here is something new, fresh and captivately beautiful. A solid oak chest decorated with replicas of rich carvings—a faithful reproduction of an old Italian cassone. Crosley craftsmen have here caught the spirit of fine old-world treasure chests. So well designed that it reflects the good taste of its owner in any environment. When not in use it appears as a chest for valuable papers, a jewel case, or an expensive cigar humidor. Lid is raised to turn radio on and left open a few inches to reflect the sound into the room. Dimensions: 9" high, 14 $\frac{1}{2}$ " wide, 9" deep. Compared with its \$34.75 price is startlingly low

CHASSIS SPECIFICATIONS

Five-tube superheterodyne of most modern type using new heater type tubes that makes possible a performance never before possible in a radio of this size. Balanced image suppressor. Combined volume control and on-off switch. Illuminated hair-line shadow dial with vernier drive and Crosley full floating moving coil dynamic speaker.

\$34.75
(Tax Paid)

Montana, Wyoming, Colorado, New Mexico and west, prices slightly higher.
THE CROSLEY RADIO CORPORATION

CINCINNATI

Home of "the Nation's Station"—WLW

Powel Crosley, Jr., President

YOU'RE THERE WITH A CROSLEY

CROSLEY RADIO

Mightiest of all

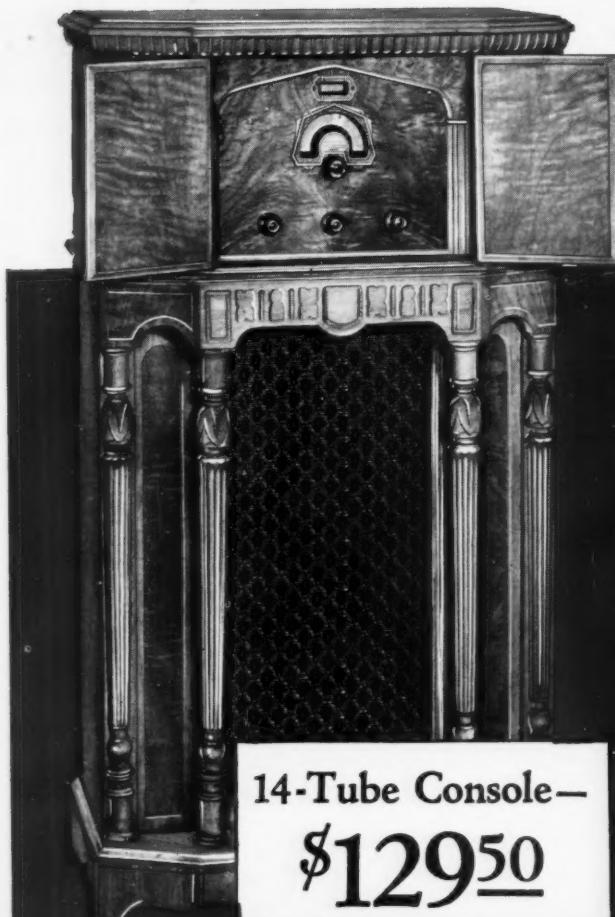


Clarion

triumphs

• • • the 14-Tube DeLuxe Console

The easiest-to-sell line in the industry brings out a new selling argument—a 14-tube sensation! As far ahead in price and performance appeal as you expect the leader of the Clarion line to be. What a radio!



14-Tube Console—
\$129.50

Write your jobber at once
for the special merchan-
dising plan on this new
money-maker.

new radio with
8%
more tone



Model 250
12-tube Console

\$73.95
Complete



Model 340
8-tube Midget
\$41.95
Complete



Model 220
6-tube Midget
\$31.95
Complete

Model 260
10-tube Console

\$52.95
Complete



Prices slightly higher in the Far West and South. All prices tax paid.

TRANSFORMER CORPORATION OF AMERICA, Ogden and Keeler Avenues, CHICAGO, ILL.